Research Article

JRAD Journal of Research and Advancement in Dentistry

J Res Adv Dent 2021;11:2:272-274.

Effects of Curcumin in Treatment of Recurrent Aphthous Stomatitis

Rakhee[1] Sudhanshu Kumar[2*] Parthsarthi Gautam[3] Niharika[4] Meeta[5] Md Abu Nafe[6]

[1]Senior Lecturer Department of Oral Medicine and Radiology, VDCH, Garhwa, Jharkhand, India.
[2]Senor Resident, Department of Oral Medicine and Radiology, Jawahar Lal Nehru Medical College and Hospital, Bhagalpur, Bihar, India.
[3]Senior Lecturer, Department of Oral Medicine and Radiology, BR Ambedkar Dental College and Hospital, Patna, Bihar, India.
[4]Senior Lecturer, Department of Pedodontics, BR Ambedkar Dental College and Hospital, Patna, Bihar, India.
[5]Senior Lecturer, Department of Periodontology and Oral Implantology, MMDCH, Darbhanga, Bihar, India.
[6]Senior Lecturer, Department of Periodontology and Oral Implantology, MMDCH, Darbhanga, Bihar, India.

ABSTRACT

Background: To assess the efficacy of Curcumin in the gel form in the treatment of minor RAS.

Materials and Methods: As a randomized clinical trial,30 patients of either sex with clinically diagnosed RAS were randomly taken. Group were asked to apply the gel three times a day on each ulcer. Estimation of the efficacy of gel was done on the basis of the time required for regression in pain, size, and number of the ulcers.

Results: The results showed a significant difference in size, pain, number, and duration of ulcers in Group within a period of 7 days.

Conclusion: Curcumin is the main pigment of principle spice in India, turmeric. It is bright yellow in colour and is known from centuries for its strong antioxidant, antiseptic, antibacterial, anti-inflammatory, immunomodulatory, and analgesic properties.

Keywords: Curcumin, recurrent aphthous stomatitis.

INTRODUCTION

Recurrent aphthous stomatitis (RAS) is commonly known as an aphthous ulcer, is the most common disease occurring in the oral cavity. The ulcers are frequently multiple, small, round, or ovoid, with well-circumscribed margins, having a yellow or greyish floor and are surrounded by the erythematous base. RAS is characterized by recurrent bouts of solitary or multiple shallow painful ulcers, at intervals of few months to few days in patients. [1]

RAS is classified into three types:

1.Minor RAS- They are also called as “canker sores “, Ulcers are less than 1 cm in size. Ulcers heal within 10-14 days without scarring.

2.Major RAS is also known as Sutton’s disease. Ulcers more than 1 cm in diameter. The ulcers persist for up to 6 weeks and heal with scarring.

3.Herpetiform ulceration is characterized by multiple recurrent ulcers may be up to 100 in number. Lesions are less than 5 cm. They are seen throughout the oral mucosa. Lesions may co coalesce to form large ulcers. These ulcers last for about 10-14 days.[1]

The lesion is self-limited, painful, high frequency of occurrence, and multifactorial etiology. 269 So an well-organized therapeutic strategy is needed to provide relief to the patients.[2] Herpetiform is very uncommon, being characterized by multiple

Received: Nov. 8, 2020: **Accepted**: Dec. 21, 2020
*Correspondence Dr. Sudhanshu Kumar.
Department of Oral Medicine and Radiology, Jawahar Lal Nehru Medical College and Hospital, Bhagalpur, Bihar, India.
Email: Not Disclosed

pISSN 2278-0076
eISSN 2321-9270

recurrent crops of small painful ulcers [3] Herpetiform ulcers present as multiple small clusters of pinpoint lesions.[4]

MATERIALS AND METHODS

This randomized clinical study was carried out over a period of 6 months, from May 2015 to November 2015, After obtaining the written informed consent, 30 patients of either sex with clinically diagnosed minor RAS were selected from among the outpatients visiting the Department of Oral Medicine and Radiology. Patients willing to participate in the study and with clinically diagnosed minor RAS noticed were included in the study.

Patients were excluded from the study if the ulcers were present at inaccessible areas, if they had major RAS, traumatic ulcer, denture stomatitis or if they were suffering from any systemic illness. The trial was approved by the research and ethical committee of BIDSH, Patna, Bihar.

Method of collection of data

Detailed case history, extraoral, and intraoral examination was performed on the patients, and 30 patients with clinically diagnosed minor RAS were selected for the study based on inclusion and exclusion criteria. These 30 patients were randomly selected into a single Group:

Group I 30patients (Curcumin Gel) Ulcer size was measured along its longest diameter using a sterile vernier calliper, and the pain score was noted from 0-10, using the Visual Analogue Scale (VAS). Patients were asked to apply the gel three times a day on each ulcer after meals and do not take food or water for half an hour after application of the gel. All patients were provided with the same measuring applicator and were instructed about the quantity and method of gel application on the first appointment itself. Patients were examined on day 0, 3, 5, and 7 to check for regression number and/or size of ulcer and any discomfort due to the gel. Pain score was noted daily by the patient.

Clinical estimation of ulcer

The response of treatment was assessed by quantitative measurement of the diameter of ulcer using a vernier calliper, at each follow- up visits by a single observer. The patients were instructed to note the pain score every morning on his/her record card as per the VAS. Assessment of the efficacy of gel was done on the basis of the time required for regression in pain, size and number of the ulcer.

Details of Curcumin gel

• Cure next Oral Gel. (Abbott Pharmaceuticals).

Data were presented as mean ± standard deviation (SD) for quantitative variables with normal distribution, and significance of difference was accepted at $P < 0.05$. Background and demographic data were summarized with descriptive statistics. To evaluate the efficacy, Mann-Whitney U test was used, and statistical analysis was done using Statistical Package for the Social Sciences (SPSS) 18 software. 270

RESULTS

Total of 30 patients participated in the study, and all patients completed the study protocol. No significant difference was identified between patients randomly assigned to the Group I with regard to basic demographic data including age and gender; size and of ulcers; and pain score on day 0. The reduction in pain was statistically significant the Group from day 0-day 7, respectively; but on Group I no statistical significance was noted in the pain score.

The reduction in size and number of ulcers were statistically significant in Group from day 0-day 7 (noted on day 0, 3, 5, 7), respectively; on Group I. There was statistical significance in the duration of ulcer in the Group from day 0-day 77respectively.

Curcumin has the ability to suppress inflammation. It also inhibits the biosynthesis of inflammatory prostaglandin arachidonic acid and neutrophil function. It also enhances wound healing by causing an increase in fibronectin and transforming growth factor transcription.

It has been demonstrated to have therapeutic potential for various information diseases such as RAS, essentially due to its anti-inflammatory and antioxidative properties against a vast phalanx of molecular targets on the applicable site.

DISCUSSION

As the treatment of RAS aims at providing symptomatic relief for the patient, the goals of treatment include a reduction in healing time of ulcer, decrease pain, size, and a number of ulcers.RAS is the most common ulcerative disease affecting the oral mucosa. [5]Minor aphthous ulcers are the most common subtype, representing 80%to 90% of all recurrent aphthous ulcers.[6] Current treatment modalities include the use of systemic and topical steroids, cauterization, antibiotics, mouth rinses containing active enzymes laser treatments, and combination therapy. The aim of treatment of RAS is to decrease Symptoms: reduce ulcer number and size; increase disease-free periods. [7]

RAS is the most common chronic disease of the oral cavity, affecting 5-25% of the population. (8) RAS are a kind of lesion in the oral mucosa consisting in the sudden and painful acute loss of the normal tissue in the mucosa, they are very disabling and recurrent, and their specific cause is unknown. [9]The Lesion is usually self-limited, its painful presentation, high frequency of occurrence. and multifocal aetiology leads to significant morbidity.[10] As is known Curcumin is known for its strong antioxidant, antiseptic, antibacterial, anti-inflammatory, immunomodulatory, and analgesic properties, a study was carried out to evaluate the therapeutic effect of Curcumin gel, the healing of ulcer in patients with RAS showed a good percentage of complete healing of ulcer in patients with RAS.

This study showed that there was a significant difference between the pain score, size, number, and duration of ulcers. Statistical significance was not noted between all the parameters.

CONCLUSION

Recurrent aphthous ulceration is the most common oral mucosal lesion and may be associated with many systemic diseases. [11]Curcumin has strong antioxidant with anti-inflammatory, immunomodulatory and analgesic properties which, according to the result obtained from the present study ,can be used as alternative to steroids in treatment of RAS.[12]

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

REFERENCES

1. Preeti L, Magesh K, Rajkumar K, Karthik R. Recurrent aphthous stomatitis. J Oral Maxillofac Pathol 2011;15:252-6.

2. Greenberg MS, Glick M, Ship JA. Burket's Oral Medicine. Hamilton: BC Decker Inc; 2008. Volume 11. p. 57-60.

3. Porter SR, Hegarty A, Kaliakatsou F, Hodgson TA, Scully C. Recurrent aphthous stomatitis. Clin Dermatol 2000;18:569-78.

4. Ship JA. Recurrent aphthous stomatitis. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 1996;81:141-7.

5. Akintoye SO, Greenberg MS. Recurrent aphthous stomatitis. Dent Clin North Am 2005;49:31- 47.

6. Shashy RG, Ridley MB. Aphthous ulcers: A diffi cult clinical entity. Am J Otolaryngol 2000;21:389-93.

7. Bassel Tarakji[1] J Int Oral Health,2015 May:7[5]: 74-80

8. J Clin Exp Dent. 2014 Apr,6(2): e 168-e174

9. Acta Otorrinolaringol Esp.2008;59(6);298-307

10. Desmukh RA,Comparision of effectiveness of Curcumin with Effectiveness of Curcumin with Triamcinolone acetonide in the gel Form in treatment of minor recurrent aphthous stomatitis :A Randomized clinical trial .Int J Pharm Investtig 2014 July ;4 (3): 138-41

11. Am J Med ,2012 Mar,125 (3)- ,292-301,doi: 10.1016/j.amjmed.2011.09.011

12. Bagewadi AS ,Comparision of effectiveness of Curcumin with Effectiveness of Curcumin with Triamcinolone acetonide in the gel Form in treatment of minor recurrent aphthous stomatitis: A Randomized clinical trial .Int J Pharm Investtig 2014 July ;4 (3):138-41.