



RESEARCH ARTICLE

Prevalence of recurrent aphthous stomatitis: An institutional study

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ABSTRACT

Objectives: Recurrent aphthous stomatitis (RAS) is an inflammatory condition, which is characterized by recurrent painful, single or multiple ulcers, appearing in the oral mucosa. There is no particular curative treatment available for RAS. Prevalence data of RAS in general population of south India is lacking. Hence, the purpose of this investigation was to determine the prevalence of RAS among patients reporting to a Dental Institution in Mangaluru, India.

Materials and Methods: Study involved the patients reporting to the Dental hospital with various complaints. Detailed case history was recorded and clinical examination was done by trained professionals. Patients having RAS were recruited in the study. For RAS patients, a questionnaire was provided which contained a details about demographic characteristics, predisposing factors, nature of the ulcers, treatment received. Data obtained from the questionnaire was analysed using software SPSS 16.0 for windows.

Results: A total of 11,618 patients reported to the dental hospital during study period. Out of these patients 221 patients were clinically diagnosed with RAS. The prevalence of RAS was 1.9%. Study consisted of 114 females (51.6%) and 107 males (48.4%). The age of patients with RAS was ranging from 13 to 58-years. The percentage of patients with frequency of recurrent ulcers within one month was 24.4%, one to three months was 38.9%, three to six months was 21.3% and more than six months was 15.4%. Duration for the healing of ulcers was also recorded. Less than 1week duration(46.2% of patients), 1-2 weeks (38% of patients), and more than two weeks (15.8% of patients) was reported. RAS was associated with specific food intake in 21.3% patients. Treatment for RAS was received by 54.8% of patients.

Conclusions: This study provides important information about the prevalence and pattern of recurrent aphthous stomatitis in south India in comparison to the data available in the current literature. This study alludes to importance of thorough history to identify the predisposing factors, thus prevention can be accomplished. Present study helps the dentists to know the patients outlook towards RAS, this would contribute to improve patient management and thus development of newer efficient therapeutics.

INTRODUCTION

Recurrent aphthous stomatitis (RAS) is an inflammatory condition, which is characterized by recurrent painful, single or multiple ulcers, appearing in the oral mucosa.¹ The prevalence rate of RAS is reported to range from 5 to 60% depending on the ethnic and socioeconomic groups studied.² Although RAS is one of the most commonly occurring recurrent oral ulcerative conditions of adults and children in the world, it is one of the least understood oral diseases. It causes vexing problems to the affected patients as well as clinicians. This is due to the fact that the precipitating factors for recurrent episodes in RAS patients is diverse, which has posed a challenge for the clinicians to identify a specific causative factor for this disease.³ A wide spectrum of potential local and systemic factors were speculated by various researchers for the origin of RAS. Various causal and precipitating factors for RAS is encompassed of genetic factor, immunologic basis, microbial agents, nutritional factors, hematologic and hormonal disturbances, physical injury, emotional stress, and other influences.^{3,4}

The pathogenesis RAS primarily involves activation of a cell-mediated immune response, mainly T lymphocytes, in which the production of tumor necrosis factor- α and other cytokines results in epithelial cell death and ulceration.⁵ RAS results in considerable pain and may lead to difficulty in speaking, eating, and swallowing.⁶ There is no particular curative treatment available for RAS. After ruling out the systemic diseases, current conventional medications are used. The present conventional medications used for RAS suppresses the local immune response, relieves symptoms, and it prevents the secondary infection.⁷ A variety of medications are used currently for the management of RAS depending on the severity of the ulcers.⁸

Important role for prevalence studies is for practical reasons to enable the assessment of the level of morbidity and the population "disease burden" for a nonfatal condition.⁹ Prevalence data of RAS is available from many countries in different populations, but the information regarding general population of south India is lacking. Hence, the purpose of this investigation was to determine the prevalence of RAS in patients reporting to the dental hospital, Mangalore, India.

MATERIALS AND METHODS

Present study was conducted in the patients reporting with various complaints to the department of Oral Medicine and Radiology, A B Shetty Memorial Institute of Dental Sciences, Mangalore. The duration of the study was from July 2013 to December 2013. The study involved 11,618 participants. Ethical clearance from the Institutional Ethical Committee was obtained. A written informed consent was obtained from the patients. Patients of all age groups reporting to the department were involved in the study. Detailed case history was recorded by trained professionals. The clinical examination of the oral cavity was done following the WHO guidelines, under artificial illumination on a dental chair, using a mouth mirror. Patients with RAS were recruited in the study. The diagnosis of RAS was entirely based on history and clinical criteria mentioned by Natah *et al.*¹ For patients with RAS, questionnaire was provided which contained a details about demographic characteristics, history of recurrent mouth ulcers, history of nature of the ulcers, history of association with any specific food intake, history of previous treatment received, reasons for receiving/not receiving treatment, details of treatment received. Data obtained from the questionnaire was analysed using software SPSS 16.0 for windows.

RESULTS

The total number of patients reported to the department of oral medicine and radiology from July 2013 to December 2013 was 11,618. Out of these patients only 221 patients were clinically diagnosed with RAS. The prevalence of the RAS in our study was 1.9%. The study sample consisted of 114 females (51.6%) and 107 males (48.4%). The age of patients with RAS was ranging from 13 to 58-years in our study (Table 1). The mean age of RAS patients was 29.94 ± 11.418 years. The frequency of the recurrent ulcers was assessed in the study. The percentage of patients with frequency of recurrent ulcers within one month was 24.4%, one to three months was 38.9%, three to six months was 21.3% and more than six months was 15.4% (Table 2). The duration of the ulcers or the time taken for the healing of ulcers was also recorded. Majority (46.2%) of patients gave history of less than 1 week duration for healing of ulcer. Period for healing was 1-2 weeks in 38% of patients. More than two weeks was required for healing of ulcers in 15.8% of patients. Only 21.3% patients had positive history of ulcers with specific food intake. In our study only 54.8% of patients received treatment for the recurrent aphthous ulcers. Remaining 45.2% of patients did not receive any treatment. Self medications such as the

Table 1. Age distribution of RAS patients

Age group (in years)	Number of patients
10-19	38
20-29	95
30-39	43
40-49	21
50-58	24
Total	221

traditional medicines, home remedies, over the counter drugs was practiced by 30.8% patients. Medical practitioners consultation was obtained by 13.1% of patients with RAS. Only 10.9% individuals consulted dental practitioners for the RAS.

DISCUSSION

The present study was conducted in patients visiting the dental hospital in Mangalore. Out of 11,618 patients visited the department of Oral Medicine and Radiology, only 221 patients reported with RAS. The diagnosis of RAS was entirely based on history and clinical criteria mentioned by Natah et al.¹ According to the literature, currently no laboratory procedures exist to confirm the diagnosis of RAS.¹ In the present study prevalence of RAS was 1.9%. This study was conducted in general population. Our study subjects were from Dakshin Kannada District of Karnataka State and from Kasaragod, Kannur districts of Kerala state. Prevalence of RAS varies based on the study populations, diagnostic criteria and environmental factors.¹⁰

In school children point prevalence of RAS was 1.23% at United States.¹⁰ Point prevalence of 1.5% and 1.2% in children and adolescents respectively was reported in another study from USA.¹¹

In the general population the prevalence was reported as varying from 5% to 66%.¹²

Table 2. Frequency of RAS episodes

Frequency of ulcers	Number of patients	Percentage
<1 month	54	24.4
1-3 months	86	38.9
3-6 months	47	21.3
>6 months	34	15.4

In our study, prevalence of RAS was found as 1.9%. This finding indicates that prevalence of RAS is lower in south Indian population compared to other regions of the world.

This may be due to the genetic factors, socioeconomic level, life style of individuals of this particular region. Our finding was in consistent with a study conducted at manipal, where prevalence of oral mucosal lesions was evaluated, in which RAS was reported as 2.1%.¹³ In a similar study conducted in North India reported the prevalence of RAS as 21.7%, which was in contrary to our study.¹⁴

These studies indicate that prevalence varies in different parts of India among the general population. A study conducted in psychiatric patients revealed prevalence of RAS as 19.33%.¹⁵ Prevalence of RAS in dental students of India was found to be 66.9%.¹⁶

Annual prevalence of RAS was found to be 37.1% in a cross-sectional survey which was conducted on students population in Jordan.¹⁷ High prevalence and severity of disease was reported in students of high socio-economic background.¹ The life time prevalence of RAU was 28.2% in a study conducted at Iraq.¹⁸

Present study consisted of 114 females (51.6%) and 107 males (48.4%) In our study females had slight predominance compared to males. This finding is in accordance with existing literature.^{19,20} In relation to the female predisposition to RAU, some authors have suggested that this association is related to hormonal rates.¹⁸ On the contrary, few studies reported higher prevalence of RAU among males.⁵

Age of our study population was ranging from 13 to 58-years old with mean age of 29.94±11.418. Adult predominance was noted by present study. This might be due to the predisposing factors such as stress,

hormonal changes, trauma, specific food intake. Patients in the third and fourth decade were most commonly affected in our study. This finding was in accordance with Patil S *et al*¹⁴ study. The peak age of onset is usually second decade.¹

RAS is characterized by spontaneously self-limiting ulcerations of the mucosa of the oral cavity. The lesions can be single or multiple and generally affect the tongue, floor of the mouth, cheeks, soft palate, fauces and gums which are the nonkeratinized parts of the oral mucosa.²¹ RAS has got varied frequency among the affected individuals. The percentage of patients with frequency of recurrent ulcers within one month was 24.4%, one to three months was 38.9%, three to six months was 21.3% and more than six months was 15.4% in our study. This variation in the frequency of occurrence of RAS is based on the precipitating factors. Attacks may be precipitated by local trauma, stress, food intake, drugs, hormonal changes and vitamin and trace element deficiencies. Local and systemic conditions, and genetic, immunological and microbial factors all may play a role in the pathogenesis of RAS.¹

Patients with RAS can be classified according to their clinical characteristics as follows:

- 1) Type A: Brief episodes occurring only a few times during the year, and characterized by tolerable pain levels.
- 2) Type B: Episodes develop on a monthly basis, lasting 3-10 days, and the pain causes the patient to modify habits of hygiene and diet.
- 3) Type C: The episodes are very painful, with chronic aphthae. Some lesions develop while others heal.²² In our study majority of patients gave history of brief episodes of RAS occurring only a few times during the year with tolerable pain.

In the present study 21.3% patients had positive history of ulcers with specific food intake. Many authors reported similar findings.^{1,18} History of the duration of the ulcers or the time taken for the healing of ulcers was recorded in the study. Majority (46.2%) of patients noted less than one week duration for healing of ulcer. One to two weeks period for healing was observed in 38% of patients. More than two weeks required for healing of ulcers in 15.8% of patients. The duration required for healing of the ulcer depends on type of the ulcer. Minor RAS heal within 10 to 14 days without scarring. Major RAS persists for 6 weeks and heal with scarring. Herpiform ulcers heal within 10 to 14 days without scarring.²³

RAS is a multifactorial process. Due to this multifactorial etiology, there is no definitive treatment for RAS. The primary goals of therapy are palliative, prevention of recurrence and promotion of ulcer healing.²⁴ Several medications are being used for the treatment of RAS.

In our study only 54.8% of patients received treatment for the recurrent aphthous ulcers. Remaining 45.2% of 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. These patients reported of occasional occurrence of small mouth ulcers and healing of ulcer within a week without intervention. Most of our patients felt mild discomfort and pain due to RAS was tolerable, thus did not require any treatment. The above fact indicates the need of patient education on RAS treatment.

Among the patients who received treatment- pain, discomfort, difficulty in eating and speaking were the primary reasons. These patients opted for the various treatment modalities such as conventional and alternative treatment.

Self medications such as the traditional medicines, home remedies, over the counter

drugs was practiced by 30.8% patients. Self medications was practiced due to the influence of family members and friends. Medical practitioners consultation was obtained by 13.1% of patients with RAS. Only 10.9% individuals consulted dental practitioners for treatment. The majority of our patients first consulted their family physician for mouth ulcers than their dentists. This data clearly indicates that majority of patients do not consult dental practitioners and oral medicine specialist for the treatment of RAS. This is due to the lack of awareness. Patients consider that dental consultation is obtained for problems related to teeth.

Our study is a single institutional study. Interpretation of data from a single institution has clear limitations. The data reflects the specific patient population reporting to this hospital and not the community as a whole.

CONCLUSION

RAS is a common, recurrent painful ulceration affecting the world's population. Treatment strategies must be directed towards pain relief, increasing the duration of ulcer-free periods, and accelerating ulcer healing. Knowledge regarding the prevalence of RAS gives an insight into the proportion of the population suffering from the condition and the possible related factors. This study provides important information about the prevalence and pattern of recurrent aphthous stomatitis in south India in comparison to the data available in the current literature. Thorough case history recording and clinical examination will be helpful for identification of the predisposing factors, and management of RAS. This study helps the dentists to know the patients outlook towards RAS, this would contribute to improve patients needs and thus development of newer efficient therapeutics.

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