

## REVIEW ARTICLE

# RECURRENT APHTHOUS STOMATITIS: A REVIEW

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### ABSTRACT:

Recurrent aphthous stomatitis, also commonly referred to as aphthous ulcers, can be defined as an immensely customary excruciating condition which affects variegated areas of the oral cavity. In spite of the boisterous ubiquity, the etiology of the disease is yet to be determined. However, a lot of risk factors have been studied to be associated with the disease. The sole purpose of the article is to shed some light on the compendium of the etio-pathogenesis of the disease along with prognosis associated with the treatment modalities available.

**Key words:** Aphthous ulcers, aphthous stomatitis, stress.

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### INTRODUCTION:

The use of the terminology aphthous ulcers have been procured from a Greek appellation referred to as 'aptha' which mediates as an oral ulcer. Recurrent aphthous stomatitis has been categorized as a pathology which is characterized as a painful agonizing condition manifested by the presence of recurring round ulcers in the oral mucosa at multiple locations.<sup>1,2</sup> Recurrent aphthous ulcers have been determined to be amongst the most common condition and complaint noticed in a dental clinic. However, one cannot ignore the fact that in spite of such notable occurrence, the etio-pathology of the result is yet to be thoroughly determined.<sup>3</sup> Also referred to as the canker sores, recurrent aphthous stomatitis have now been classified as a part of inflammatory diseases affecting the oral mucosa.<sup>4</sup> Considering age as a factor, epidemiological studies have determined that the incidence and prevalence of the aphthous ulcers is more in younger generation as compared to the elder group.

### PRE-DISPOSING FACTORS:

**A) GENETIC FACTOR:** Various study have clearly depicted that around 42% of the subjects suffering from recurrent aphthous ulcer has a history of family involvement. Hence genetic involvement is considered to be mammoth pre-disposing factor.

Those subjects who have ulcers owing to the genetic maybe more severe.<sup>5</sup>

**B) STRESS:** Stress has been implicated as one of the common factors associated with the recurrent aphthous stomatitis. The reason implied is that when a subject is under stress, it leads to the development of the gratuitous habits which involves injury to the oral mucosa. This injury in turn leads to oral aphthous ulcer.<sup>6</sup>

**C) TRAUMA:** In dental settings, frequent use of injections may lead to trauma. Moreover, trauma due to tooth with a sharp cusp or due to hard bristle of a tooth brush may result into injury to the oral mucosa, leading to aphthous ulcer.<sup>7</sup>

**D) ENDOCRINE INVOLVEMENT:** Some studies have demonstrated that luteal phase of menstrual cycle may be associated with the onset of the aphthous ulcer. However no epidemiology study have successfully corroborated the hypothesis.

**E) TOBACCO PRODUCTS:** An interesting relation has been established between tobacco cessation and recurrent aphthous ulcers. This has been demonstrated as a result of increased mucosal keratinization. It has been proposed to provide NRT therapy to such patients to reduce the incidences of the aphthous ulcers.<sup>8</sup>

**F) DEFICIENCY:** A lot of cases with people suffering from recurrent aphthous ulcers have also

found to be suffering from various deficiencies. Amongst them, most of the subjects suffer from iron and Vitamin B12 deficiency. The concept is backed by evidence in cases where administration of the vitamins have improved the condition of recurrent aphthous ulcers.

**G) DRUGS INTAKE:** Various drugs, especially ACE inhibitors have been found to be analogous with the development of recurrent aphthous stomatitis. Also some other drugs in the group of non-steroidal anti-inflammatory category such as diclofenac have been associated with the development of oral ulcers.<sup>9</sup>

**H) MICROBIAL BASIS:** In the development of recurrent aphthous ulcer, streptococci has been implicated as a major factor. Especially *Streptococcus Sanguis* have been particularly isolated.<sup>10</sup> Some of the ulcers have been detected to have some content of *H.pylori* but a definite relationship has not been established yet.<sup>11</sup>

#### **ETIO-PATHOGENESIS:**

Even though the clinical manifestations and the predisposing factors of the disease remain evident, no single process can determine the etio-pathology of the disease.<sup>12</sup> The logical explanation pertaining to this is the fact that it is not a single disease but a part of group of disorders leading to recurrent oral ulcers. Those patients who have predisposing factors involved like in the form genetics and some other trigger factors, lead to a development of successive stepped chain of inflammatory cytokines. This particular group of cytokines target the mucosa in the oral cavity. When there is a meticulous evaluation on the front of microscopic portion of the aphthous ulcers, it can be determined that there is a presence of massive amount of leucocytes. The quantity of leucocytes present associated with the intensity of the disease. The ulcer site is pre-approached by lymphocytes and post-approached by polymorpho-nuclear leukocytes.

#### **CLINICAL FEATURES:**

The recurrent aphthous ulcers are typically well circumscribed yellow colored lesions encompassed by erythematous halo. However a more typical clinical appearance is based on the type of recurrent aphthous stomatitis. There are 3 basic types of recurrent aphthous stomatitis:

- A) Minor recurrent aphthous stomatitis
- B) Major recurrent aphthous stomatitis
- C) Herpetiform recurrent aphthous stomatitis

A) **Minor recurrent aphthous stomatitis:** Minor recurrent aphthous stomatitis is the most common form of clinical presentation of the recurrent aphthous stomatitis. It constitutes about 85% of the total cases of recurrent aphthous stomatitis.<sup>13</sup>

The usual size of ulcer range from 5mm upto 1 cm. The healing is usually contemplated by 2 weeks. The usual sites involved is the mucosa both labial as well lingual, palate especially soft palate and floor of the oral cavity. The lesions usually heal without any form of scarring.

B) **Major recurrent aphthous stomatitis:** Major recurrent aphthous stomatitis which has also been commonly referred to as the Sutton's disease is a relatively rare disorder observed in about 15% case of recurrent aphthous stomatitis. The usual size of the ulcer is above 1cm. The healing is usually accomplished within a time frame of 6 weeks and usually heals with a scar. The most usual sites involved are soft palate and the lips.<sup>14</sup>

C) **Herpetiform recurrent aphthous stomatitis:** Herpetiform recurrent aphthous stomatitis is the rarest form of recurrent aphthous stomatitis constituting less than 5% of the cases. It is usually characterized by the appearance of numerous small round ulcers at numerous site in the oral cavity. They usually coalesce to form a huge sized ulcer. It is an extremely painful condition that requires medical care. This particular group has been found to have a female predilection.<sup>15</sup>

#### **TREATMENT MODALITIES:**

Since the exactly etiology of the disease remains yet to be determined, it is difficult to develop a standard regimen of treatment. However, pre-disposing play an important role in the etiology as well prognosis of the disease and hence every step must be taken to prevent them. The treatment could be divided into topical application and systemic modalities.

##### **A) Topical Application**

1) **Steroids:** Steroids have been commonly implicated as a major treatment option for the canker sores. Usually dexamethasone is prescribed in the dose of 1mg 3 times a day for 5 days. Cases have shown significant improvement both in the size of the ulcer and the severity of the disease.

2) **Aphthasol:** Aphthasol is categorized as an anti-inflammatory drug used in the treatment of Apha. It is used in the form of 5% tube and applied topically at the site of ulcer about 4 times a day. However due to its major

allergic side effects, it has now been discontinued from commercial sale in USA.

- 3) **Antibiotics:** Topical antibiotics can be used in treatment of recurrent aphthous ulcer especially to reduce the size of the lesion. The antibiotics work by reducing the level of inflammation through reticence of the matrix metallo-proteinases. Usually, doxycycline in the gel form is applied at the site of the ulcer.

#### **B) Systemic Modalities :**

- 1) **Multivitamin Tablets:** Vitamin deficiency, especially Vitamin B12 deficiency has been linked to manifestation of canker sore. Few studies have shown that use of multivitamin tablets can help reduce the severity of the ulcer and also significantly decline the reoccurrence of the disease.
- 2) **Montelukast:** Small research studies have shown positive results regarding the use of Montelukast. Even though the results are not immediate, but in long run it has been found to be more successful than prednisolone.
- 3) **Immuno-modulators:** Immuno-modulators have shown promising results which includes use of drugs like Azelastine, levamisole, gamma globulins and few others.

#### **CONCLUSION:**

Since the etiology and the pathogenesis of the disease remains unclear, it is extremely imperative that a control of predisposing factors is maintained in order to reduce the chances of suffering from recurrent aphthous stomatitis. Nevertheless, some treatment modalities have emerged in recent years, no definite treatment still exists for the disease. Development of better understanding of the disease and subsequent treatment plan is necessary.

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