

### Original Research Paper

**Dental Science** 

# IgE levels in recurrent aphthous stomatitis in kashmiri popultion

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KEYWORDS			

Recurrent aphthous stomatitis is the most common recurrent ulceration affecting the oral cavity and affect about 20% of population<sup>1</sup>. It is quit disturbing as it causes difficulty in speaking swallowingand eating and affects patients quality of life negatively<sup>2</sup>. It is characterized by multiple small recurrent, round ovoid ulcers which have circumscribed margins, erythematosus haloes and yellowish or grayish floor. Mostly present on nonkeratinised and mobile mucosa and rarely present on gingiva and hard palate<sup>3</sup>. In 80% of cases RAS commences before 30 years of age, while onset in later years should raise suspicion about RAS being part of more complex disorder like Behcets syndrome<sup>4</sup>.

The lesions of recurrent ulceration may represent one disease but they may be the manifestation of various systemic disease particularly those of gastrointestinal tract. Etiology is mostly unknown more than 40% of RAS patients have history of the disease in their 1<sup>st</sup> degree relatives<sup>5</sup>. A number of predisposing events have been attributed to the causation of the RAS these include trauma, stress, hormonal imbalances, smoking cessation, food hypersensitivity, infection, immune dysregulation<sup>6,7</sup>. Studies in the past have noted alteration in serum and salivary levels of IgA and IgG<sup>6,9</sup>. Also elevated serum levels IgE have been reported in Behcets disease patients<sup>10</sup>.

There is an increasing evidence of association between elevated serum levels of IgE and immune mediated dermatological conditions. The study was conducted to explore the association between serum IgE levels in patients suffering from recurrent aphthous stomatitis.

**Subjects and methods:** - A total of 30 RAS were included in the study that in included minor RAS, major RAS and herpetiform RAS. Also included in the study were 30 control subjects who come to the department for other disorder

Inclusion criteria were patients aged between 18-50 years of age. History of recurrent ulcers in oral cavity, with at least two episodes in previous 1 year.

Exclusion criteria were HIV infection, hepatitis B and C infection, oral mucosal disorders like pemphigus, oral lichen planus, ulceration associated with systemic disease like ulcerative colitis behcets syndrome, Reiters syndrome, history of medication intake that have been associated oral ulceration like chemotheraupetic agents, history of corticosteroid intake.

All the patients included in the study were informed regarding the study and informed consent were taken from each patient. A detailed history of each patient was taken that include demographic features (like age, sex, education etc) family history of RAS, smoking habits, age at the 1<sup>st</sup> presentation of disease, history of stress, occupation.

All the patients were subjects to basic laboratory investigations like complete blood count to rule out hematological abnormalities and serum levels of IgE in patients and controls. Serum IgE levels were calculated using radioimmunoassay.

Patients were enquired about recurrent ulceration related systemic conditions by answering questionnaire that include

- Inflammatory bowl disorder or glutein-sensetive enteropathy
- Behcets syndrome according to criteria of the international group for Behcets disease
- Past or present history of allergy.

**Statistical Analysis:** -Statistical software SPSS (version 20.0) and Microsoft Excel were used to carry out the statistical analysis of data. Descriptive Statistics of data including the means and standard deviations for numerical variables and the percentages of different categories for categorical variables was obtained. Parametric data was analyzed by employing Student's independent t-test. Chi-square test or Fisher's exact test, whichever appropriate, was used for comparison of categorical variables. Graphically the data was presented by bar and pie diagrams. A P-value of less than 0.05 was considered statistically significant

 $\mbox{Results:}$  -In the present study females were affected more commonly than males as shown in table 1 and figure 1

## Figure 1showing the gender distribution among RAS patients

	Females	Males
Cases	17	13
Controls	16	14

#### Table 1 Showing Gender Distribution

In the present study majority patients were below the age of 30 (80%) as shown in the figure 2



Figure 2 showing the age distribution of RAS patients

In the present study minor recurrent aphthous was present in 27 patients (90%) while major aphthous was present in 1(3%)patient

#### and herpetiform ulceration was present in 2(7%)patients.

Labial mucosa was involved most commonly followed by tongue, buccal mucosa, floor of mouth, palate.

When comparing the average IgE levels in cases and controls it was found to be statistically significant in cases than controls in the present study. Also 42 % of the RAS patients reported higher than normal levels of IgE. The frequency and severity were directly proportional to the serum levels of IgE.

#### Serum IgE levels in cases and controls (in IU/ml)

	Cases	Controls	P value
Females	204.5+17.3	160.4+16.3	0.028*
Males	211.4+15.3	164.2+14.3	0.032*

#### \*P value statistically significant < 0.05

**Discussion:-** RAS is commonest recurrent oral ulceration with in cadence of 1 in every 5 subjects<sup>11</sup>. On the basis of clinical and laboratory evidence RAS is believed to be the immunologically mediated condition. There is well defined sequence of cellular changes within the ulcerative lesion as it progress through the various stages of ulceration and systemic immune system shows range of altered parameters that reflect disease activity and susceptibility<sup>12,13</sup>.

The basic aim of our study was to investigate association between serum IgE levels in RAS patients. There was statistically significant elevated serum levels IgE in RAS when compared with the controls. The elevated levels were more common in patients in more frequent recurrences and more severity of lesions. Scully et al (1982) in their study observed higher levels of IgE and IgD in patients of RAS than in normal controls or patients with other ulcerative conditions<sup>14</sup>. The elevated levels were more common in female patients than in male patients.

Study conducted by G Almoznino et al in Israeli population found that elevated serum IgE levels in RAS patients and were associated with younger age < 12 years of schooling, early onset of RAS, RAS frequency of every 2 weeks, female gender. They advocated that serum IgE levels should be considered as a part of initial work up in RAS patients<sup>15</sup>. However they conducted their study on multi ethnic groups while our study was confined to the local Kashmiri population.

Bays et al in the study found IgE bearing lymphocytes in the RAS lesional tissues and their peripheral blood of these patients<sup>16</sup>. Natah et al in their study found showed an increase in number of mast cells in perilesional tissues from RAS lesion with signs of increase activity as found in active degranulation phase or activation phase inflammation<sup>17</sup>.

Also in our study RAS was more common in young adults (23.5y+4.3y) this was consistent with the studies of Ship et al<sup>18</sup>, Mc Cullough<sup>19</sup>, Chattopadhyay and Chatterji<sup>20</sup>.The most common sites of occurrence in decreasing order were labial mucosa(83%), tongue (lateral and anterior surfaces58%), buccal mucosa(21%); palatal mucosa was involved in 1 case which was in consistent with previous studies.

Hematological deficiencies were present 24% of patients and were in the form of iron deficiency anemia, megaloblatic anemia and were consistent with other studies in the past<sup>21</sup>.

**Conclusion:** in the present study elevated serum levels were found in patients with recurrent aphthous stomatitis in the study group than in the control group. However since sample size in our study was very less we suggest a large study containing large sample size should be conducted to verify our results. Also we conclude that serum IgE should be included in the initial workup in the treatment of the RAS.

#### References:

- 1. MARTIN S. GREENBERG, MICHAEL GLICK. Burkets Oral Medicine Diagnosis & Treatment 12 edition: BC Decker Inc 2015.
- Neville BW, Damm DD, Allen CM, Bouquot JE. Oral and Maxillofacial Pathology 2d ed. Pailadelphia: W.B. Saunders; 2002; 285-290.
   Gringer Gentle, Oral and Maxillofacial Machines. The basis of dispersion and
- Crispian Scully Oral and Maxillofacial Medicine. The basis of diagnosis and treatment 2nd edition. Elsevier; 2008; 151-158.
   Crispian Scully, Meir gorsky, Francina Lozarda-Nur. The diagnosis and
- Crispian Scully, Meir gorsky, Francina Lozarda-Nur. The diagnosis and management of recurrent aphthous stomatitis. J Am Dent Assoc 2003; 134:200-207.
- Shohat-Zabarski R, Kalderon S, Klein T, et al. Close association of HLA-B51 in persons with recurrent aphthous stomatitis.Oral Surg Oral Med Oral Pathol 1992; 74: 455–8.
- Field EA, Longman LP. Tyldesley's Oral Medicine, 5th edn. Oxford: Oxford University Press, 2003.
  - 7. SOOK-BIN WOO, STEPHEN T. SONIS, Recurrent Aphthous Ulcers:
  - A Review of Diagnosis and Treatment. J Am Dent Assoc 1996; 127:1202-1213.
    Sistig S, Vuci\_cevi\_c-Boras V, Lukac J, Kusi\_c Z (2002). Salivary IgA and IgG
  - subclasses in oral mucosal diseases. Oral Dis 8: 282–286.
  - Mohammad R, Halboub E, Mashlah A, Abou-Hamed H (2013). Levels of salivary IgA in patients with minor recurrent aphthous stomatitis: a matched case-control study. Clin Oral Investig 17: 975–980.
  - Onat AM, Buyukhatipoglu H, Yilmaz M, Geyik R, Celik A, Ozturk MA (2007). Immunoglobulin E: a new diagnostic clue for Behcet's disease? IgE and Behc\_et's disease. Clin Rheumatol 26: 81–83.
  - Savage NW, Seymour GJ, Kruger BJ. Expression of class I and class II major histocompatibility complex antigens on epithelial cells in recurrent aphthous stomatitis. J Oral Pathol 1986;15:191-195.
  - Sistig S, Cekic-Arambasin A, Rabatic S, Vucicevic Boras V, Kleinheinz J, Piffko J. Natural immunity in recurrent aphthous ulceration. J Oral Pathol Med 2001;30:275-280
  - Scully C, Yap PL, Boyle P (1983). IgE and IgD concentrations in patients with recurrent aphthous stomatitis. Arch Dermatol 119: 31–34.
     G Almoznino, A Zini, Y Mizrahi1, DJ Aframian.Elevated serum IgE in recurrent
  - G Almoznino, A Zini, Y Mizrahi1, DJ Aframian.Elevated serum IgE in recurrent aphthous stomatitis and associations with disease characteristics Oral Diseases (2014) 20, 386–394.
  - Bays RA, Hamerlinck F, Cormane RH (1977). Immunoglobulin E-bearing lymphocytes and polymorphonuclear leucocytes in recurrent aphthous ulcers in man. Arch Oral Biol 22: 147–153.
  - Natah SS, Konttinen YT, Enattah NS, Ashammakhi N, Sharkey KA, H€ayrinen-Immonen R (2004). Recurrent aphthous ulcers today: a review of the growing knowledge. Int J Oral Maxillofac Surg 33: 221–234.
  - Ship II (1972). Epidemiologic aspects of recurrent aphthous ulcerations. Oral Surg Oral Med Oral Pathol 33: 400–406.
  - McCullough MJ, Abdel-Hafeth S, Scully C (2007). Recurrent aphthous stomatitis revisited; clinical features, associations, and new association with infant feeding practices? J Oral Pathol Med 36: 615–620.
     Chattopadhyay A, Chatterjee S (2007). Risk indicators for recurrent aphthous
  - Chattopadhyay A, Chatterjee S (2007). Risk indicators for recurrent aphthous ulcers among adults in the US. Community Dent Oral Epidemiol 35: 152–159.
  - Jurge S, Kuffer R, Scully C, Porter SR (2006). Mucosal disease series. Number VI: recurrent aphthous stomatitis. Oral Dis 12: 1–21.