

## Assessment Of The Prevalence Of Chronic Recurrent Aphthous Stomatitis In Different Age Groups

Evaluación de la prevalencia de estomatitis aftosa crónica recurrente en diferentes grupos de edad

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### Abstract

The paper presents the data of the study on the prevalence of chronic recurrent aphthous stomatitis (HRAS) in the adult population of different age groups. 1526 persons were examined. Of these, 253 patients (58.49% women and 41.51% men) aged 18 to 82 years were diagnosed with chronic recurrent aphthous stomatitis. All subjects were divided into 4 age groups: young patients – from 18 to 44 years old; middle – from 45 to 59 years old; elderly – from 60 to 74 years old; senile age – from 75 to 89 years. The prevalence of HRAS was found to depend on age group and gender identity. Our study found that middle-aged patients had a higher prevalence of HRAS (36.75%) than young (33.2%) and elderly patients (18.18%). The lowest prevalence of HRAS is observed in elderly patients and is 11.85%. Patients of middle and young age groups often need professional treatment and prevention measures.

**Keywords:** chronic recurrent stomatitis, prevalence of HRAS, oral mucosa aphthae.

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### Resumen

El artículo presenta los datos del estudio sobre la prevalencia de la estomatitis aftosa crónica recurrente (HRAS) en la población adulta de diferentes grupos de edad. Se examinaron 1526 personas. De estos, 253 pacientes (58,49% mujeres y 41,51% hombres) de 18 a 82 años fueron diagnosticados con estomatitis aftosa crónica recurrente. Todos los sujetos se dividieron en 4 grupos de edad: pacientes jóvenes, de 18 a 44 años; medio - de 45 a 59 años; ancianos - de 60 a 74 años; edad senil - de 75 a 89 años. Se encontró que la prevalencia de HRAS depende del grupo de edad y la

identidad de género. Nuestro estudio encontró que los pacientes de mediana edad tenían una mayor prevalencia de HRAS (36,75%) que los pacientes jóvenes (33,2%) y ancianos (18,18%). La prevalencia más baja de HRAS se observa en pacientes de edad avanzada y es del 11,85%. Los pacientes de grupos de mediana edad y jóvenes a menudo necesitan tratamiento profesional y medidas de prevención.

**Palabras clave:** estomatitis crónica recurrente, prevalencia de HRAS, aftas de la mucosa oral.

## Introduction

Chronic recurrent aphthous stomatitis is one of the most common diseases of the oral mucosa <sup>1</sup>. Due to the large number of etiological factors that provoke the development and recurrence of the disease, the treatment of HRAS is a subject of discussion in modern dentistry <sup>2, 3</sup>.

Chronic recurrent aphthous stomatitis is a chronic inflammatory disease of the oral mucosa, characterized by the formation of single or multiple aphthae. Typical is the defeat of the oral mucosa, covered with non-keratinized epithelium: the mucous membrane of the lips and cheeks, the bottom of the mouth, the lower surface of the tongue, soft palate<sup>4, 5, 6</sup>.

According to various studies, HRAS is most common in young and middle-aged patients. Before puberty, male and female patients have the disease with equal frequency. With age, the prevalence of female patients is observed <sup>7</sup>. Some researchers point to the hereditary nature of the disease: if both parents have a history of HRAS, the probability of developing the disease in their child is 90% <sup>8</sup>.

Purpose of the study. To evaluate the prevalence and features of the clinical course of chronic recurrent aphthous stomatitis in patients depending on age and gender.

## Materials and methods

During the study, a dental examination of 1526 people was carried out. Of these, 253 patients (148 women and 105 men) aged 18 to 82 years were diagnosed with chronic recurrent aphthous stomatitis. The International Classification of Diseases (ICD-DA, 1994 WHO, Section XI) was used to make the diagnosis. Bednar's aphthae are characteristic of infants, therefore, were not taken into account in this study.

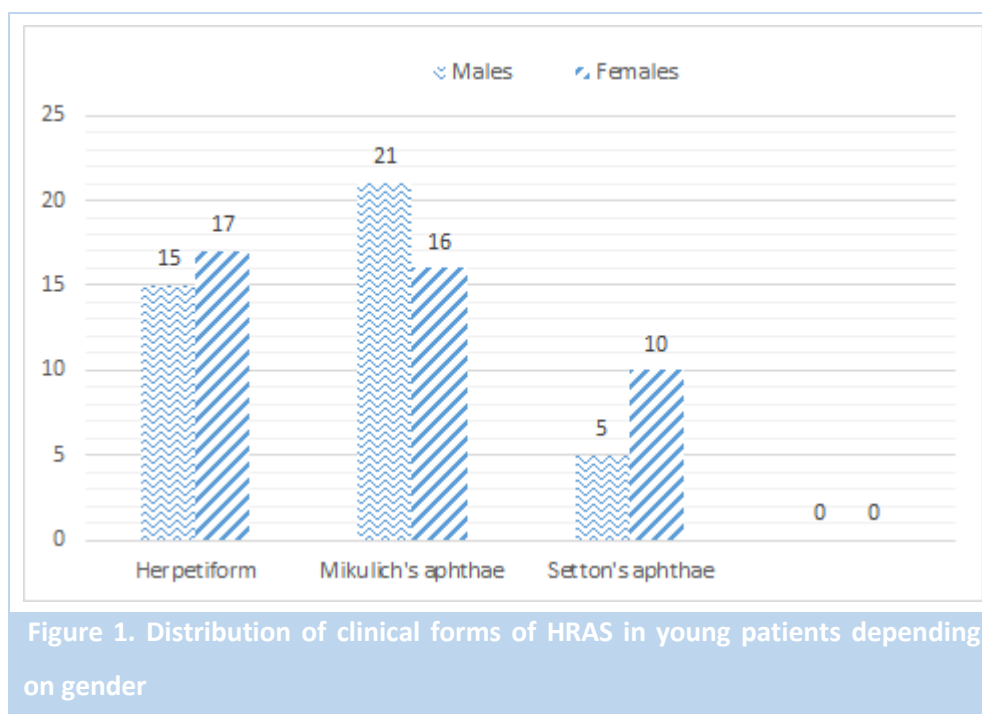
The division by age was based on the classification proposed by the WHO (1963).

## Results

Within the framework of this study, a total of 1526 patients were examined, chronic recurrent aphthous stomatitis was diagnosed in 253 persons (16.57%). The division by age is shown in the table.

Table 1. Distribution of patients with HRAS depending on age and gender							
Young age		Middle age		Elderly age		Senile age	
males	females	males	females	males	females	males	females
41 (48.8%)	43 (51.19%)	30 (11.85%)	63 (24.9%)	17 (6.71%)	29 (11.46%)	17 (6.71%)	13 (5.13%)
84 (33.2%)		93 (36.75%)		46 (18.18%)		30 (11.85%)	

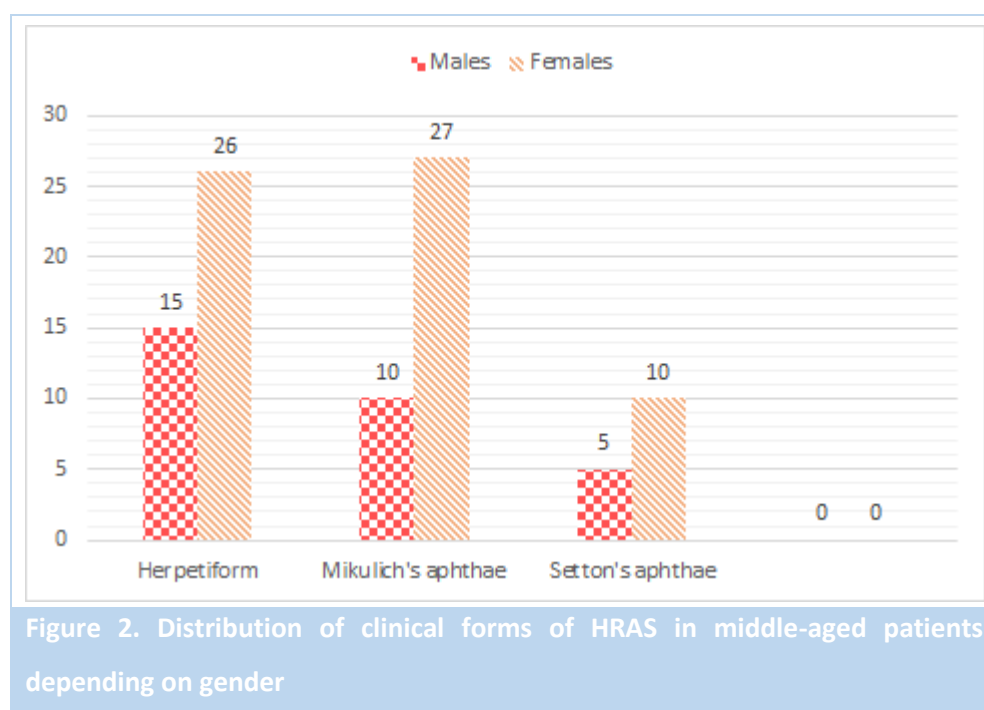
Among all 253 examined with a diagnosis of HRAS, 84 people (41 men and 43 women), or 33.2%, were represented by young patients. In 32 (38.09%) patients of this age group, herpetiform of HRAS was found, of which 15 were men (46.87%) and 17 were women (53.12%). Mikulich's aphthae were diagnosed among 37 patients (44.04%): in 21 men (56.75%) and 16 women (43.24%). Setton's aphthae were found in 15 patients (17.85%), including 5 men (33.33%) and 10 women (66.66%). (Fig. 1)



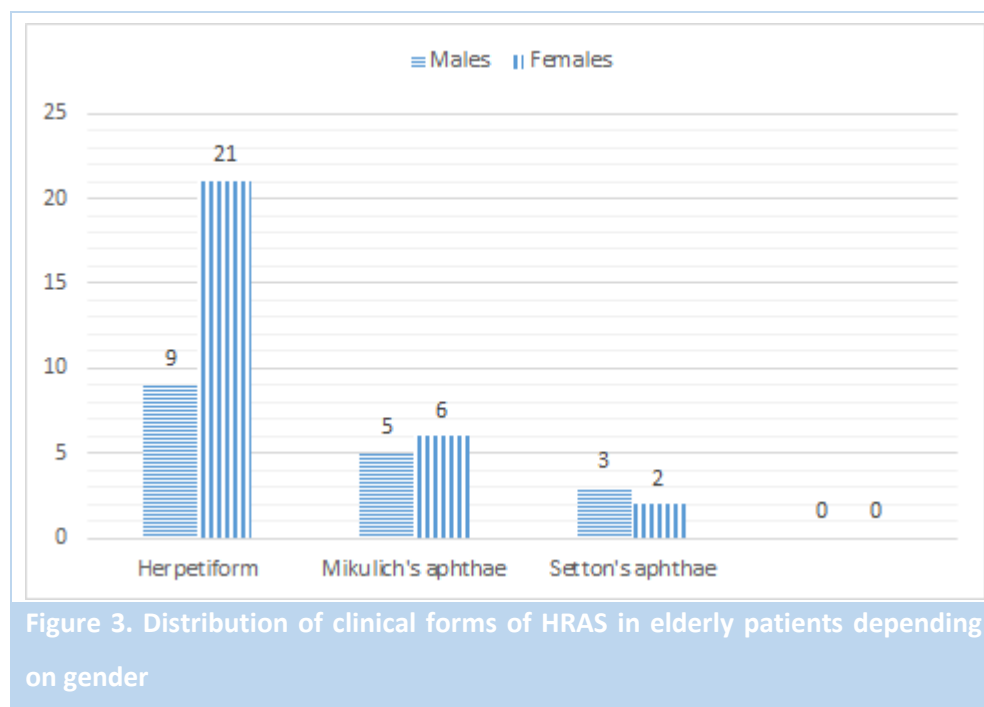
Consequently, in young patients, the most common HRAS forms are Mikulich's aphthae and herpetiform. Moreover, the percentage of male and female patients for these clinical forms is approximately the same. It should be noted that patients of this age group had more frequent relapses of the disease. The most characteristic localization of

HRAS for young patients is the mucous membrane of the lips, mainly the lower one. At the same time, 9 women (20.9%) in this age category were at different stages of pregnancy, which suggests a direct influence of hormonal changes on HRAS manifestation.

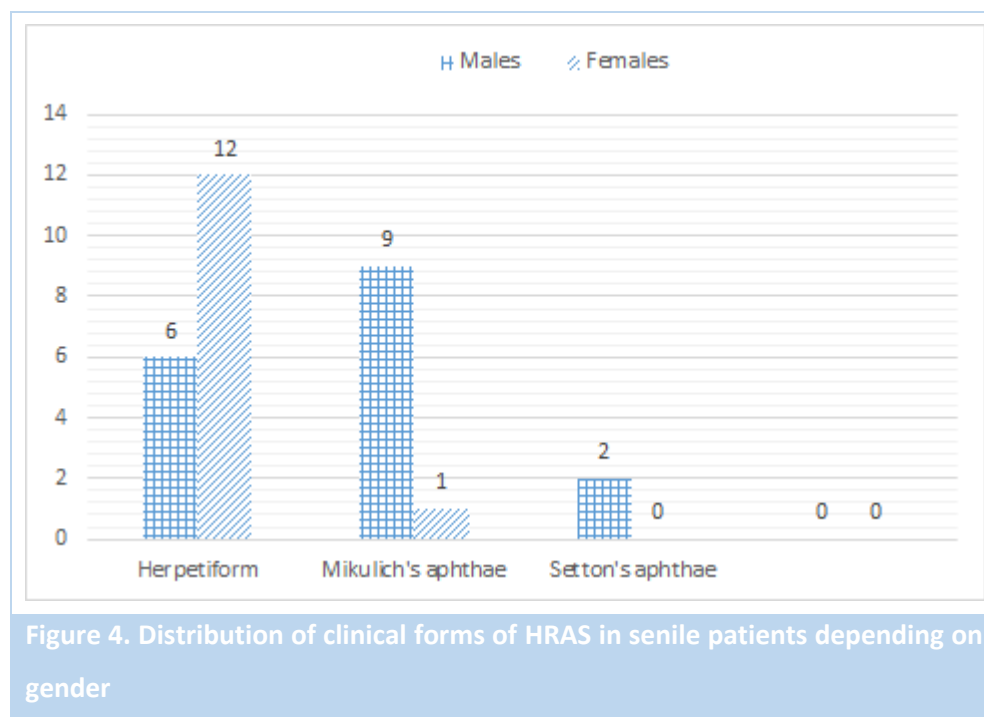
In the middle age group, chronic recurrent aphthous stomatitis was found in 93 patients (36.75%), of which 30 were men and 63 – women. Herpetiform was diagnosed in 41 patients (44.08%), including 15 men (36.58%) and 26 women (63.41%). Mikulich'saphthae were found in 37 patients (39.78%), of which 10 were men (27.02%) and 27 were women (72.97%). The remaining 15 patients (16.12%) were diagnosed with Setton'saphthae. This clinical form was found in 5 male patients (33.33%) and 10 female patients (66.66%). (Fig. 2)



Thus, it can be concluded that among the middle age group patients, there is a predominance of female patients. The most common form remains herpetiform. Patients with this clinical form of HRAS noted a history of acute respiratory viral infections and stressful situations, which indicates the correlation between a decrease in the body's immune forces and the development of HRAS. For this age group, it was not possible to identify the predominant localization of the rash. Aphthous lesions were found with approximately the same frequency in different parts of the oral cavity. Among elderly patients, HRAS was found in 46 patients (18.18%), including 17 men and 29 women. 30 (65.21%) elderly patients were diagnosed with herpetiform of HRAC, of which 21 were female (70%) and 9 were male (30%). Mikulich'saphthae were found in 11 patients of this age group (23.91%), including 5 men (45.45%) and 6 women (54.54%). Setton'saphthae were diagnosed in 5 elderly patients (10.86%), in 3 men (60%) and 2 women (40%). (Fig. 3)



Thus, the most common HRAS form in this group of patients is also herpetiform. According to our observations, 44 patients (95.65%) of this age group had a history of diabetes mellitus. Among elderly patients, the characteristic localization of the rash was the mucous membrane of the hard palate. However, in 17 elderly patients (36.9%) aphthae were found on the mucous membrane of the tongue, which is not typical for patients of other age groups. In elderly patients, HRAS was detected in 30 of 253 examined patients (11.85%), of which 17 (56.66%) were men and 13 (43.33%) were women. Also, the most commonly diagnosed form of HRAS was herpetiform, it was found in 18 out of 30 patients (60%), including 12 women (66.66%) and 6 men (33.33%). Mikulich'saphthae were diagnosed in 10 people out of 30 (33.33%), including 9 men (90%) and 1 woman (10%). Setton'saphthae were diagnosed in 2 patients (6.66%) of this age group, both patients were male. (Fig. 4)



All senile patients had a history of life aggravated by general somatic diseases. It should be noted that the healing time of aphthous rashes in this group of patients was significantly slower. A pattern in the aphthae localization could not be detected as well.

## Discussion

according to our study, the prevalence of chronic recurrent aphthous stomatitis is 16.57% of the total number of patients studied. According to Klyueva L.A., the prevalence of HRAS in Surgut is 18.7%<sup>9</sup>. And according to studies by Suleimanova D.M., conducted in the Republic of Belarus, the prevalence of chronic recurrent aphthous stomatitis among the adult population is 34.5%. Such a high indicator is explained by the influence of unfavorable radiation background as well as by the presence of concomitant pathology of the gastrointestinal tract in the examined population<sup>10</sup>.

In young patients, the most common forms of HRAS were herpetiform (38.09%) and Mikulich'saphthae (44.04%). With herpetiform, aphthous rashes were localized in several parts of the oral cavity at once. Most often, the mucous membrane of the hard palate and the soft palate were affected. In young patients, the most frequent relapses of HRAS were noted, while the healing of aphthae occurred relatively faster than in other age groups. The most frequent localization of Mikulich'saphthae in patients of the young group was the mucous membrane of the lower lip. Mikulich's aft is characterized by a more pronounced pain syndrome, and the healing time is longer than with herpetiform. The number of male and female patients in the group of young patients is practically the same.

Examination of middle-aged patients showed that the HRAS occurrence in this age group is the highest – 36.75%. Patients of this age group are characterized by a more pronounced pain syndrome, as well as a longer course of the disease. In this age group, there is a pronounced predominance of female patients. However, in male patients Mikulich'saphthae and Setton'saphthae were clinically more severe. A history of viral diseases and stresses was characteristic of the patients of this age group.

The number of elderly patients with HRAS is less than that of younger patients. In total, in this age group, HRAS was detected in 18.18% of cases. As in the two previous groups, the most common form of HRAS is herpetiform. It is diagnosed in 65.21% of cases. In this age group, there is also a predominance of female patients. It should be noted that 44 out of 46 patients in this group had diabetes mellitus in the anamnesis.

Examination of senile patients showed that HRAS was diagnosed in 11.85% of cases. The most frequently diagnosed form of HRAS in this age group was also herpetiform; it was detected in 60% of cases. In this age group, there is a predominance of male patients. Longer healing of aphthae was characteristic for this group, while the severity of pain syndrome was less intense than in patients of other groups, with the exception of two patients with Setton'saphthae.

## Conclusions

In-depth dental examination of patients with chronic recurrent aphthous stomatitis allowed us to determine the prevalence of the disease as well as the frequency of various clinical forms depending on gender and age. The clinical course of the disease was more severe and prolonged in patients with a history of aggravated general somatic status. The most severe chronic recurrent aphthous stomatitis occurred in patients with a burdened allergic background. The vast majority of patients, regardless of age group, had more than 2 aphthous rashes in the oral cavity, which was accompanied by low-grade fever (23.94%), weakness and hypodynamia (25.7%), as well as an increase in regional lymph nodes (37.8%).

As a result of the study, it was found that young and middle-aged patients are more likely than other age groups to develop chronic recurrent aphthous stomatitis.

Among all those examined with aphthous rashes in the oral cavity, female patients predominate. The most common forms of HRAS are herpetiform and the minor form of aphthae. The most common localization is the mucous membrane of the hard palate, lips, cheeks.

Studies conducted in the countries of the European Union in the 2010s showed that the prevalence of HRAS among the adult population is 23% <sup>11</sup>. An extensive study conducted in various states of America showed that the prevalence of HRAS in the United States varies from 21 to 54% <sup>12, 13, 14</sup>. Croatian scientists note the presence of HRAS in 10-20% of the country's population <sup>15</sup>.

According to our research prevalence of HRAS is 16,57% in patients aged 18 to 82. Thus the multifactorial nature of etiological causes, a variety of pathogenetic mechanisms as well as the high prevalence and lack of clear mechanisms for the treatment of HRAS, indicate the need for more in-depth studies of chronic recurrent aphthous stomatitis

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