IMMUNOLOGICAL FEATURES OF YOUNG CHILDREN WITH CANDIDAL AND HERPETIC STOMATITIS

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ARTICLE INFO

Received: 1st June 2026
Accepted: 5th June 2026
Online: 8th June 2026

KEYWORDS

candidal stomatitis, herpetic stomatitis, immunity, young children, immunoglobulins, lymphocytes

ABSTRACT

Stomatitis is one of the most common diseases affecting the oral mucosa in young children. Particular attention is given to candidal and herpetic stomatitis due to their high prevalence and tendency to recur. The aim of this study was to evaluate the immune status of children aged 1 month to 3 years with candidal and herpetic stomatitis. A total of 30 children were examined, including patients with candidal and herpetic stomatitis, as well as a control group of apparently healthy children. Differences in humoral and cellular immunity parameters were identified depending on the clinical form of the disease. The obtained results confirm the involvement of immunological mechanisms in the development of stomatitis in young children.

Introduction

Diseases of the oral mucosa occupy an important place in the structure of pediatric morbidity. Among them, candidal and herpetic stomatitis are the most common forms. In early childhood, these diseases are of particular interest because the development of the immune system is not yet complete, which contributes to increased susceptibility to infectious agents.

Candidal stomatitis develops as a result of excessive growth of Candida species on the oral mucosa. The main risk factors include immaturity of the immune system, artificial feeding, antibiotic therapy, and concomitant diseases. Herpetic stomatitis is caused by the herpes simplex virus and is characterized by a pronounced inflammatory response, intoxication, and lesions of the oral mucosa.

In recent years, increasing attention has been paid to the study of immunological mechanisms involved in the development of stomatitis. It is well known that the state of cellular and humoral immunity significantly influences the course of the disease, the severity of clinical manifestations, and the frequency of relapses. However, the characteristics of immune status in young children with different forms of stomatitis remain insufficiently studied.

Aim of the Study

To evaluate the immune status of children aged 1 month to 3 years with candidal and herpetic stomatitis.

Materials and Methods

This comparative study was conducted at a pediatric inpatient hospital.

A total of 30 children aged from 1 month to 3 years were examined. The participants were divided into three groups:

- Group I – 10 children with candidal stomatitis;
- Group II – 10 children with acute herpetic stomatitis;
- Group III (control group) – 10 apparently healthy children of comparable age.

The inclusion criteria were the presence of clinical signs of stomatitis, age under 3 years, and parental consent for participation in the study.

All patients underwent:

- medical history assessment;
- clinical examination of the oral cavity;
- complete blood count;
- determination of immunoglobulin A (IgA) and immunoglobulin G (IgG) levels using enzyme-linked immunosorbent assay (ELISA);
- assessment of the relative lymphocyte count in peripheral blood.

Statistical analysis was performed using conventional methods of variation statistics. The results are presented as mean values and standard error of the mean (M ± m). Differences were considered statistically significant at $p < 0.05$.

Results

Clinical examination of children with candidal stomatitis revealed whitish curd-like plaques on the mucosa of the cheeks, tongue, and palate. Most patients exhibited irritability, refusal to eat, and moderate hyperemia of the oral mucosa.

Children with herpetic stomatitis presented with multiple vesicles and erosions on the oral mucosa, marked pain, elevated body temperature, and enlargement of the submandibular lymph nodes.

The results of the immunological assessment are presented in Table 1.

Table 1. Immunological Parameters of the Examined Children

Parameter	Candidal Stomatitis (n=10)	Candidal Stomatitis (n=10)	Candidal Stomatitis (n=10)
IgA (g/L)	0,42±0,08	0,58±0,07	0,71±0,09
IgG (g/L)	7,1±0,6	8,4±0,7	6,9±0,6
Lymphocytes (%)	56,3±4,2	62,8±3,9	49,1±3,4

Analysis of the results showed that children with candidal stomatitis had significantly lower IgA levels compared with the control group. A decrease in IgA concentration may indicate impairment of the protective mechanisms of the mucous membranes and contribute to the active proliferation of fungal flora.

The IgG level in children with candidal stomatitis did not differ significantly from that observed in the control group.

Children with herpetic stomatitis demonstrated a significant increase in IgG levels, reflecting activation of humoral immunity in response to viral infection. In addition, this

group exhibited an increased relative lymphocyte count, indicating the involvement of cellular immunity in the antiviral defense of the body.

In the control group, immune status parameters were within the age-specific reference range.

Discussion

The obtained data demonstrate the presence of distinct differences in the immunological mechanisms underlying the development of candidal and herpetic stomatitis in young children.

In candidal stomatitis, the most characteristic finding was a reduction in IgA levels. It is known that both secretory and serum IgA play a key role in protecting the mucous membranes against fungal infection. Deficiency of this component of the immune system may lead to decreased local resistance and facilitate colonization of the mucosa by Candida species.

In herpetic stomatitis, signs of activation of both humoral and cellular immune responses were identified. The increase in IgG levels reflects the organism's response to viral infection, while the elevated lymphocyte count is associated with activation of antiviral defense mechanisms.

Thus, different clinical forms of stomatitis are accompanied by distinct alterations in immune status, which should be taken into account when selecting treatment strategies and preventive measures.

Conclusions

1.In young children with candidal stomatitis, a decrease in IgA levels was observed compared with healthy children.

2.Herpetic stomatitis is associated with increased IgG levels and an elevated relative lymphocyte count.

3.Changes in immunological parameters indicate the involvement of both humoral and cellular immune components in the pathogenesis of stomatitis.

4.Assessment of immune status may be used as an additional method for evaluating disease severity and the effectiveness of therapy.

The obtained results confirm the need for further investigation of immunological features of stomatitis in young children.

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