

Methods of Treatment of Herpetic Stomatitis in Children with Congenital Cytomegalovirus

Sharipova Gulnikhol Idiyevna*, Karimova Nigina Yusufvna

Bukhara State Medical Institute, Bukhara, Uzbekistan

Abstract The development of modern dentistry has increased the efficiency of dental services by improving the early diagnosis, treatment and prevention of various pathological conditions associated with the oral cavity among the population. As a result, modern highly effective methods of diagnosing, treating and preventing many diseases have been developed and introduced into dental practice. However, the issues of treating dental diseases occurring against the background of various bacterial, fungal, and especially viral diseases have not been fully resolved. These include herpetic stomatitis, which occurs against the background of cytomegalovirus infections, and in order to plan research work on improving its treatment, we found it necessary to conduct an analysis of scientific sources on this problem and provide a review.

Keywords Child, Cytomegalovirus, Stomatitis, Oral cavity, Diagnosis

1. Introduction

The high relative importance of cytomegalovirus infection affects both the demographic situation and the health of the mother and child. The most significant medical and social feature of cytomegalovirus infection is its devastating effect on all organs and systems of the fetus, primarily its central nervous system, which increases the risk of miscarriage, stillbirth, and the child's disability, the formation of defects in its development, and disability. From this point of view, cytomegalovirus infection is of particular epidemiological importance among dangerous infections. Worldwide, special attention is paid to research aimed at improving the treatment of diseases of the oral mucosa, including herpetic stomatitis, in children with congenital cytomegalovirus infection. In this regard, in modern dentistry, it is of particular importance to identify the clinical and functional features of the specific course of symptoms of viral inflammatory diseases associated with oral diseases, to assess the role of dental and physiotherapeutic measures in the complex treatment process, to develop a comprehensive step-by-step approach plan that takes into account the somatic condition of children, to propose treatment and prevention methods based on the functional impairment of the oral cavity organs in children with congenital cytomegalovirus infection; to improve the development of methods for assessing the effectiveness of treatment [1,5,7].

2. Method of Using the Device

During the study period, a total of 475 children with congenital cytomegalovirus infection were examined at the Bukhara Regional Specialized Pediatric Dentistry Center in 2020–2023 and were registered as “D” at the address of residence in Bukhara city and district polyclinics. Of these, 132 children aged 3-12 years old with congenital cytomegalovirus herpetic stomatitis were selected for the main group (59 boys, 73 girls), 72 children with herpetic stomatitis but without cytomegalovirus were selected for the comparison group, and 30 healthy children were selected for the control group. Among the 475 children, in addition to the main disease, several concomitant diseases were identified [4,6].

3. Method of Conducting an Abacterial Environment

During the study, we divided herpetic stomatitis in children with cytomegalovirus into 3 groups depending on the severity of the course.

Mild, moderate and severe.

Mild herpetic stomatitis - mild in 27 children in the main group. Mild - during the study, children were accompanied by the appearance of several bubbles or ulcers on the mucous membrane of the oral cavity. These rashes are usually limited to a small area. They heal in a short time. Our children did not have fever and severe pain. Recurrences were observed 1 or 2 times a year. Mostly our children had mild herpetic stomatitis in the lip area [6].

Moderate herpetic stomatitis - mild in 61 children in the main group. Mild - during the study, children were accompanied

* Corresponding author:

sharipova.gulnihol@bsmi.uz (Sharipova Gulnikhol Idiyevna)

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by the appearance of large bubbles and erosion on the mucous membrane of the oral cavity. They complained of severe pain in the area of bubbles and erosion. Children are accompanied by an increase in body temperature, general weakness and irritability. Rashes appeared simultaneously in several places of the mouth. Recurrences were observed 3 or 4 times a year. By localization, mild herpetic stomatitis was observed in our children with unilateral localization. Severe herpetic stomatitis - severe form was observed in 44 children in the main group. In severe form - during the study, children had extensive rashes on the mucous membrane of the oral cavity, the merging of bubbles into large ulcers and erosions. In severe herpetic stomatitis, high virus activity and weakened immunity were mainly observed. Our children complained of severe pain, chills, vomiting, high fever (above 38°C) and difficulty eating due to painful ulcers. More than 5 recurrences were observed per year. By localization, severe herpetic stomatitis is considered multi-localized.

Treatment of children was carried out in 2 different ways.

General and local treatment methods.

General treatment is a treatment aimed at reducing cytomegalovirus infections in the body and improving the immune system in the body, depending on the metabolism in the body.

Local treatment is a treatment aimed at improving the condition of the oral mucosa and the inflamed focus in our children against the background of the main disease, which is the main goal of our research work.

In addition to treating herpetic stomatitis in children with cytomegalovirus in the study groups, we simultaneously proposed therapeutic and preventive measures to reduce the level of hygiene in the oral cavity, PMA, KPU index, as well as reduce the incidence of ENT diseases and inflammatory processes.

Treatment of herpetic stomatitis for all children of the main group began with a dental examination, teaching the rules of individual oral hygiene and monitoring the implementation of these rules. Professional oral hygiene was carried out, caries and its complications were treated [4,7].

General treatment was carried out in the same way for all children in the study, that is, in the children of the main and comparison groups. Since our children complained of severe pain in the oral cavity and the inability to eat, we carried out the following sequence of actions in the area of inflammation:

1. Local anesthesia was performed by completely treating the affected area with a 10% lidocaine spray of 4.6 mg.
2. Antiseptic treatment was carried out by completely treating the affected area with a 0.05% chlorhexidine solution.
3. The main local treatment of our children was given in each group accordingly. Below are the following:

The main group of children were children with herpetic stomatitis caused by cytomegalovirus (132 people), and we divided them into 3 large groups according to the treatment method.

Group 1 consisted of 45 children, who were treated with stomaspheres in addition to the above treatment.

Group 2 consisted of 36 children, who were treated with dry interferon in addition to the above treatment.

Group 3 consisted of 51 children, and these children were treated with both stomaspheres and dry interferon in combination.

The comparison group consisted of children with herpetic stomatitis caused by cytomegalovirus (72 people), and we also divided them into 3 large groups according to the treatment method.

Group 1 consisted of 24 children, who were treated with stomaspheres in addition to the above treatment.

Group 2 children consisted of 21 people and were treated with Dry Interferon in addition to the above treatments. Group 3 children consisted of 27 people and were treated with both stomaspheres and Dry Interferon in combination [5,7].

The condition of the oral cavity, the abundance of inflammatory processes occurring in it and the absence of a single preventive system, make the mucous tissues of the oral cavity susceptible to purulent bacteriological processes. In this regard, in order to increase the intensity of the preventive process in the oral cavity and for the pathogenetic treatment of herpetic stomatitis, we have developed "stomaspheres" (Certificate of Deposit of Copyright Objects No. 006073 of the Intellectual Property Agency under the Ministry of Justice of the Republic of Uzbekistan). It is used by the author in the field of dentistry in the medical field. The program was created for electronic computers (No. DGU 27023). Stomaspheres are a special therapeutic agent used for the treatment of herpetic stomatitis. Antiviral and proliferative stomaspheres or small rings can be used for herpetic stomatitis in children.

Stomaspheres treat stomatitis in children and adults, which is accompanied by pain in the oral cavity and causes discomfort during eating. Eliminates discomfort in the oral cavity and the prolonged duration of the painful process [2,5,6].

Stomaspheres directly affect the 3 phases of inflammation - alteration, exudation and proliferation, accelerating these phases of inflammation, reducing exudate, reducing inflammatory mediators formed in the area of inflammation, accelerating the granulation of the mucous membrane, eliminating non-specific microorganisms in the area of inflammation, accelerating the removal of purulent plaque from the wound, reducing pain in the focus of inflammation and enhancing the regeneration of the wound surface [4].

The appearance of stomaspheres is simple, resembling the "Chupachups" that children love, and they come in various bright colors. Having stomaspheres in this state eliminates the fear of children when using them, ensures their increased use, and at the same time faster healing. During the study, we treated local stomatitis foci in the oral cavity of children by applying stomaspheres. Stomatitis foci were treated once a day with one therapeutic stomasphere, after 5 treatment procedures, the microplaster on the therapeutic

part of the stomasphere rotation should be replaced. After that, the treatment process is carried out in the above order [1].

Stomaspheres consist of three parts:

1- rubber micro-aspirator, 2- handle, 3- rotation.

Rubber micro-aspirator is a peripheral part that fixes the stomasphere and creates a vacuum in the wound area. The stomasphere is a hollow, non-reactive piece made of elastic rubber. It can hold 1 mm³ of air. When the stomasphere is introduced into the oral cavity and the area of stomatitis, the stomasphere is compressed, as a result of which the circular part of the stomasphere, that is, the sphere, covers the wound area and is fixed there, creating a slight vacuum environment. The rubber stomasphere is attached to one end of the stomasphere handle [4,6].

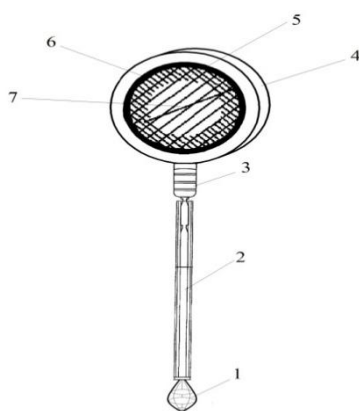


Figure 1. Schematic structure of the stomasphere and its use in the child's oral cavity

4. Conclusions

Modern laboratory diagnostics of cytomegalovirus infections expands the understanding of the pathogenesis of infection and helps to prevent infectious diseases. Early diagnosis of infections reduces the risk of epidemics. Knowledge of the most at-risk groups of the population for infection allows for timely anti-epidemic (preventive) measures. The prevalence of dental diseases in children of the first and second periods of childhood with cytomegalovirus and methods of diagnosing diseases in them are examined in this chapter, providing the concept of an individual approach to each child [1,7].

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