



**THE IMPORTANCE OF SORBENTS IN LOCAL TREATMENT OF ODONTOGENIC
PHLEGMONS IN CHILDREN**

Ikramov G'ayrat Alimovich

Tashkent State Medical University

Xalmanov Baxodir Abdirashidovich

Tashkent State Medical University

Zokirjonova Gulsanam Xolmurod qizi

Tashkent State Medical University

Mamasoliyev G'iyosiddin Abdumavlonovich

Andijan State Medical Institute

Relevance

Pathogenic microflora occupies a leading place in the etiology of inflammatory diseases of the maxillofacial region; in most cases it is predominantly found on the oral mucosa, in carious cavities, and in periodontal pockets. Therefore, many studies are aimed precisely at isolating and investigating this flora. The results of current research provide evidence for the etiological significance of microorganisms such as *Staphylococcus aureus* and *Streptococcus spp.* in purulent-inflammatory diseases of the maxillofacial region. In addition, there is a substantial body of data on opportunistic microflora and its role in the development of acute odontogenic purulent-inflammatory diseases of the maxillofacial area.

Keywords

odontogenic phlegmon, purulent-inflammatory process, sorbent, microflora, local clinical parameters.

When discussing the treatment of acute purulent-inflammatory diseases of the maxillofacial region, the issue of managing endogenous intoxication has recently become particularly important. Under modern conditions, the excessive pharmacological burden on the body, the weakening of immunological defense due to environmental factors, decreased sensitivity of microflora to antibiotics, and increased allergic reactivity of the organism indicate the low effectiveness of widely used treatment methods.

At present, the principles of surgical and pharmacological treatment have been well substantiated, and significant progress has been achieved in the management of maxillofacial phlegmons. However, their effectiveness still does not provide sufficiently favorable outcomes. In addition to surgical intervention, the pathogenetic therapy of purulent-inflammatory diseases requires a set of therapeutic measures, including control of infection, immunostimulation, detoxification, and general strengthening therapy. Antibacterial therapy occupies a central place in the drug treatment of acute odontogenic purulent-inflammatory diseases. Nevertheless, despite the wide range of modern antibiotics, the number of life-threatening complications has not decreased. The incidence of acute purulent-inflammatory diseases of the maxillofacial region is increasing, atypical forms of the disease are emerging, and severe toxic manifestations of purulent inflammation are being observed.

Currently, special attention is again being paid to the problem of endogenous intoxication in the treatment of these conditions. According to numerous studies by foreign and national authors, antibacterial therapy in purulent-inflammatory processes is ineffective in almost 30% of cases, which leads to an increase in both the severity and the number of complications.



Aim of the study: to evaluate the effectiveness of local treatment of odontogenic phlegmons in children by using the sorbent “Polisorb.”

Objectives of the study:

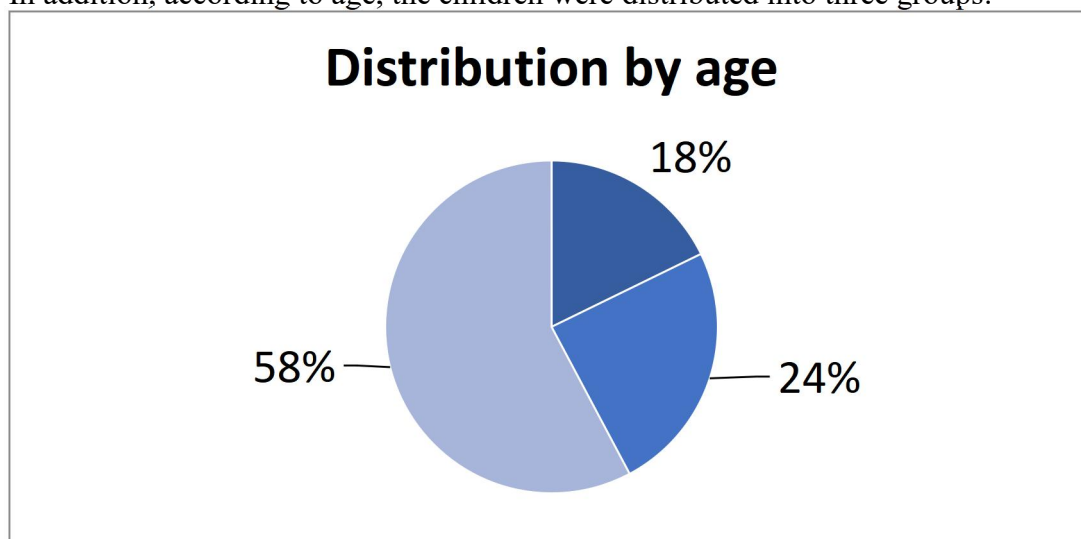
1. To assess the clinical parameters of the purulent focus after incision and drainage of odontogenic phlegmons in children.
2. To evaluate the state of the wound microflora after incision and drainage of odontogenic phlegmons using the sorbent “Polisorb.”
3. To carry out a comparative evaluation of the effectiveness of conventional treatment methods and local application of the sorbent “Polisorb” in odontogenic phlegmons.

Materials and methods:

The study included 50 children aged 3 to 14 years who were treated at the Department of Pediatric Oral and Maxillofacial Surgery of the Dental Clinic of Tashkent State Medical University. The sorbent “Polisorb” was used as the study material. Particular attention was paid to the age, sex, and local clinical parameters of the patients. Children with acute odontogenic purulent-inflammatory diseases were divided into two groups:

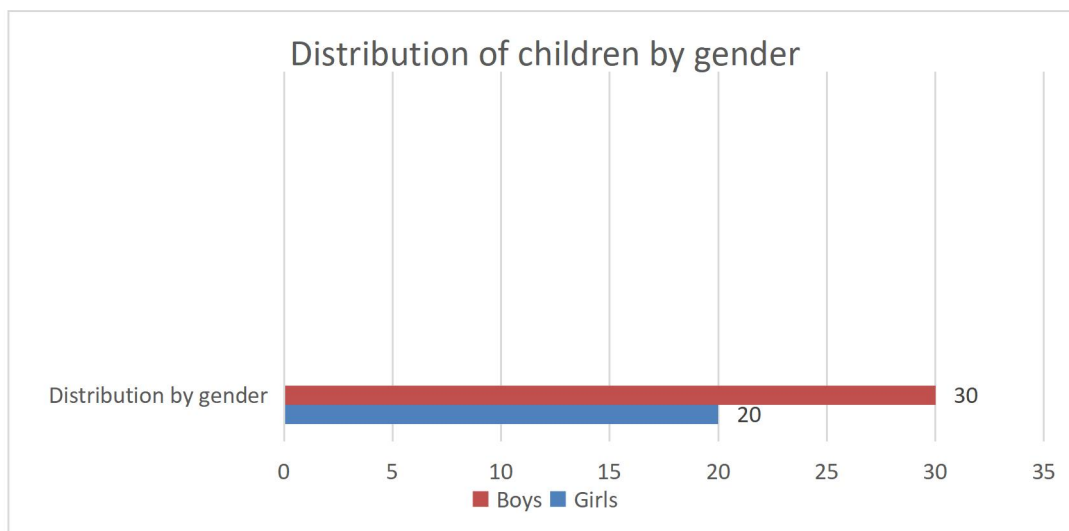
- Group 1 – conventional treatment (n = 25)
- Group 2 – conventional treatment combined with local application of the sorbent “Polisorb” (n = 25)

In addition, according to age, the children were distributed into three groups:



1. 3–7 years – 29 children (58% of the total number)
2. 7–10 years – 12 children (24%)
3. 10–14 years – 9 children (18%)

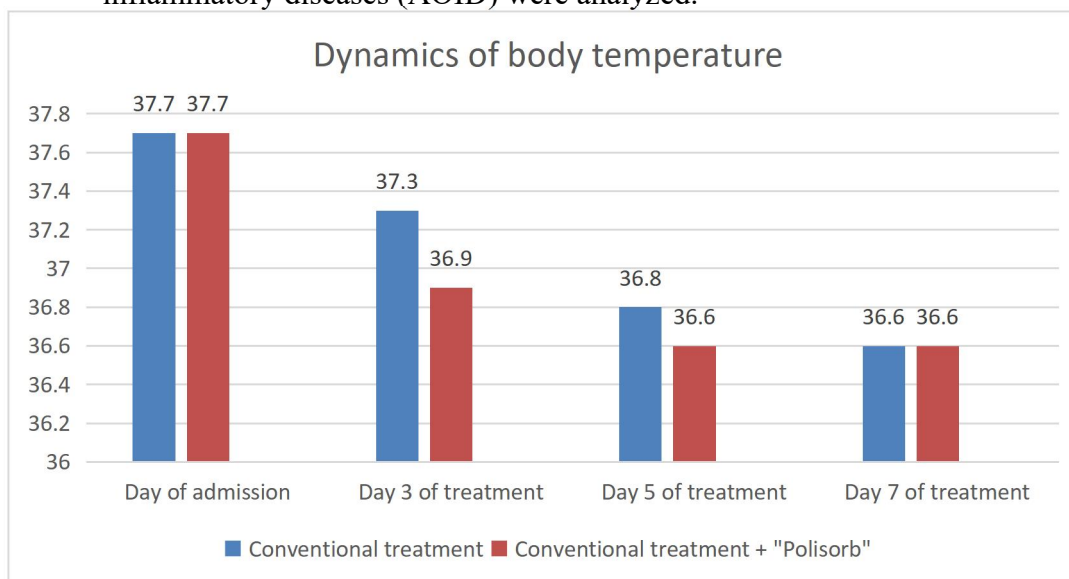
Distribution of children according to sex:



1. The number of girls was 20, accounting for 40% of the total number of children.
2. The number of boys was 30, accounting for 60% of the total number of children.

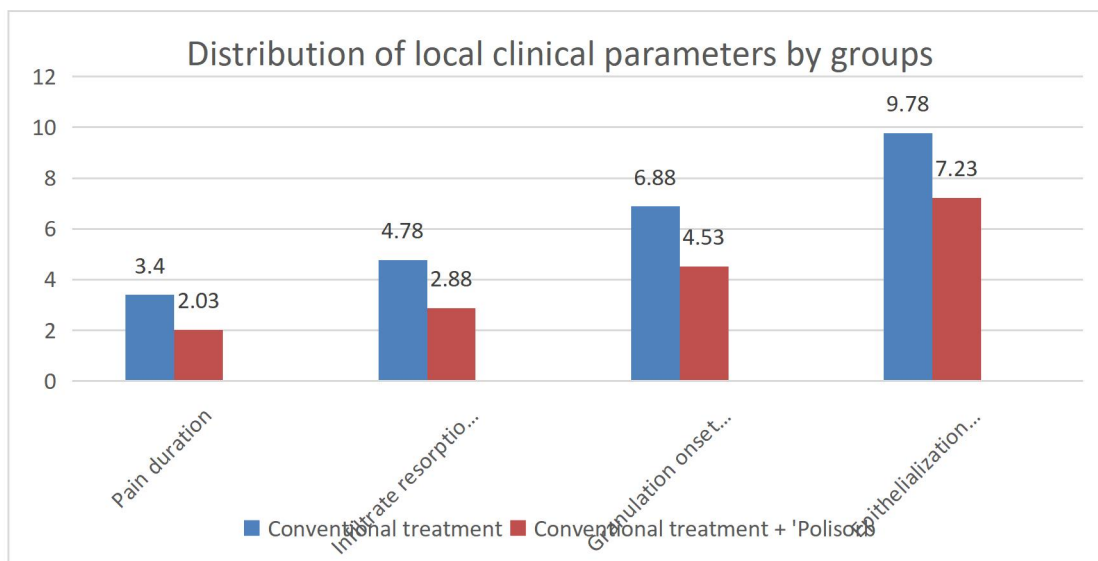
In order to accomplish the set objectives, the study consisted of three main stages:

Stage 1: The indicators of inpatient treatment of children with acute odontogenic inflammatory diseases (AOID) were analyzed.



As can be seen from the diagram above, normalization of body temperature in children treated with the **conventional therapy** method occurred on day 7, i.e., a decrease in body temperature to 36.6 °C corresponded to the seventh day of hospitalization. In contrast, in the **conventional therapy + "Polisorb PM"** group, body temperature decreased to 36.6 °C on the fifth day of hospital stay.

Stage 2: The effect of the sorbent on the condition of the purulent wound was morphologically assessed.



The effect of the sorbent on local clinical parameters was observed starting from the second day, which indicates that the improvement was achieved two days earlier than the changes in local clinical indicators in the **conventional treatment** group (Fig. 1). This result contributes to the earlier resolution of psychological, immunological, and morphological problems in children with acute odontogenic purulent-inflammatory diseases and helps to prevent various complications.

Stage 3: The effectiveness of using the sorbent “Polisorb PM” in the local treatment of children with odontogenic phlegmons was determined.

The active substance of “**Polisorb MP**” (INN) is colloidal silicon dioxide. Dosage form: powder for the preparation of an oral suspension. Composition: one gram of the preparation contains 1.0 g of the active substance — colloidal silicon dioxide. It is a white or white with a bluish оттенок, light, odorless powder. “Polisorb MP” is an inorganic, non-selective, multifunctional enterosorbent based on highly dispersed silica with a chemical formula of SiO_2 and a particle size of up to 0.09 mm.

Results of the study. The findings demonstrated that in children with acute odontogenic purulent-inflammatory diseases the sorbent “Polisorb PM” possesses sufficient sorption capacity, prevents the absorption of wound exudate into surrounding tissues, promotes its evacuation, eliminates microorganisms and their metabolic products, and exhibits pronounced anti-inflammatory, necrolytic, analgesic, and anti-edematous effects, thereby creating optimal conditions for tissue repair.

It should be emphasized that application sorption is a method of local detoxification based on the direct contact of the sorbent with the wound surface, which ensures the removal of toxic metabolites, microbial cells, and bacterial toxins from purulent wound exudate. In addition, sorbents help maintain a stable level of lipid peroxidation in the tissues surrounding the wound and preserve the antioxidant properties of tissues.

Conclusion. It can be concluded that in children with odontogenic phlegmons the dynamics of general and local signs of the inflammatory process corresponded to the dynamics of clinical parameters. Thus, the use of the sorbent “Polisorb PM” in the complex treatment of odontogenic phlegmons in children led to an improvement in both clinical and morphological indicators.

Based on the analysis of the obtained results, it can be noted that the sorbent “Polisorb PM”:

- more rapidly normalizes the general condition of the patient and eliminates local signs of



inflammation;

- is effective and easy to use;
- ensures painless dressing changes and deodorizes purulent exudate;
- has no contraindications and does not cause adverse or allergic reactions;
- reduces the duration of treatment in children with odontogenic phlegmons;
- provides significant economic efficiency.

References:

1. Azimov M. Odontogenic inflammatory diseases of the maxillofacial region in children. – 2017. – pp. 5–10.
2. Jilonov A.A., Narmahmatov B.T. Oral and maxillofacial surgery. – 2017.
3. Azimov M.I. Pediatric surgical dentistry. – 2017.
4. Shargorodsky A.G. Inflammatory diseases of the tissues of the maxillofacial and neck regions. – 2001. – pp. 6–10.
5. Robustova T.G. Surgical dentistry. – 2003. – 180 p.
6. Ikramov G.A. et al. Modern view on the etiology and pathogenesis of odontogenic abscesses and phlegmons of the maxillofacial region (literature review). *Internauka*. – 2021. – No. 12-1. – pp. 72–75.
7. Odontogenic infections: microbiology and management
<https://pubmed.ncbi.nlm.nih.gov/>
8. Deep neck space infections of odontogenic origin
<https://pubmed.ncbi.nlm.nih.gov/?term=deep+neck+space+infection+odontogenic>
9. Management of odontogenic fascial space infections
<https://scholar.google.com/scholar?q=management+of+odontogenic+fascial+space+infections>
10. Microbiology of odontogenic infections
<https://scholar.google.com/scholar?q=microbiology+of+odontogenic+infections>
11. <https://www.sciencedirect.com/>
12. <https://www.elsevier.com/>