



EFFECTIVENESS OF HYGIENIC AND PHARMACOLOGICAL MEASURES IN THE PREVENTION OF OROPHARYNGEAL CANDIDIASIS IN YOUNG CHILDREN

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Abstract: *the aim of this study is to assess the effectiveness of hygienic and pharmacological measures in the prevention of oropharyngeal candidiasis in children aged 0 to 3 years. Given the immaturity of the immune system and the high susceptibility of mucous membranes in early childhood, a comprehensive preventive approach was emphasized. A total of 120 children participated in the study, divided into a main and a control group. The main group received a preventive regimen that included daily oral hygiene, sterilization of feeding items, topical antifungal therapy, and probiotic administration. Over a 12-month period, a significant reduction in the incidence of oropharyngeal candidiasis was observed in the main group compared to the control group. Statistical analysis revealed a significant difference ($p < 0.01$), confirming the effectiveness of the preventive strategy. These results highlight the importance of implementing systematic preventive measures in pediatric outpatient care.*

Keywords: *candidiasis, children, prevention, hygiene, antifungal agents, probiotics.*

Introduction



Oropharyngeal candidiasis (commonly known as thrush) is a frequent opportunistic infection in infants and young children, particularly in the first years of life when the immune system is still developing. It is caused predominantly by *Candida albicans*, a fungal organism that forms part of the normal oral microbiota but can become pathogenic under favorable conditions, such as microbial imbalance, mucosal damage, or immune suppression. In early childhood, several physiological and environmental factors contribute to the increased risk of candidal colonization and infection. These include underdeveloped mucosal immunity, frequent antibiotic use, bottle-feeding, pacifier use, and inadequate oral hygiene practices. In neonates and infants, the risk is further exacerbated by the potential for cross-contamination from caregivers, feeding equipment, and the mother's breast skin or milk ducts. According to pediatric data, up to 25–30% of infants may experience at least one episode of oral candidiasis within the first year of life [1]. While treatment of oropharyngeal candidiasis is usually effective with topical antifungal agents, recurrence is common, especially in the absence of preventive measures. Recurrent thrush can cause significant discomfort, feeding difficulties, disrupted sleep, and parental concern, and may also be a gateway for deeper fungal infections in vulnerable patients. This highlights the clinical importance of not only treating the condition but also preventing it through a proactive, multifactorial approach. Despite the known risks, preventive strategies remain underutilized in routine pediatric care. There is a growing body of evidence suggesting that a combination of hygienic measures and pharmacological support, including the use of probiotics and topical antifungals when indicated, can substantially reduce both incidence and recurrence rates. However, few studies have systematically

evaluated the effectiveness of such combined interventions in early childhood. This study aims to fill that gap by assessing the clinical efficacy of a structured preventive program that includes

Materials and Methods

The study was conducted at Pediatric Clinic in Bukhara over a 12-month period.

Participants: 120 children aged 0 to 3 years were monitored.

Methodology:

Children were divided into two groups:

Main group (n = 60) – received hygienic and pharmacological preventive care.

Control group (n = 60) – received standard care without additional interventions

Hygienic measures included: daily oral cleaning, sterilization of childcare items, and hygiene control of the breastfeeding mother.

Pharmacological prevention included:

topical application of 1% nystatin solution (as indicated),

probiotic course (*Lactobacillus reuteri*) for 14 days every 3 months,

vitamin supplementation (vitamins D and C, age-appropriate dosing).

Effectiveness was assessed based on incidence of candidiasis symptoms, microscopy data, and general clinical status.

Results

Indicator	Main Group Control Group	
Number of children with candidiasis	8 (13.3%)	27 (45%)
Average episode duration	3.2 days	5.6 days
Recurrences within 6 months	2 cases	11 cases
Side effects	none	-

Statistical analysis showed a significant difference ($p < 0.01$) between the groups in disease incidence. The risk of developing candidiasis was reduced by 3.4 times in the group receiving comprehensive measures.

Discussion

The findings confirm the high effectiveness of an integrated approach to preventing candidiasis in early childhood. Hygienic measures significantly reduce microbial load, while pharmacological agents help normalize the microbiota and strengthen mucosal defense.

Maternal hygiene is of particular importance, as infection may also occur via breastfeeding. Probiotics demonstrated an added benefit by enhancing immune protection.

The results of this study confirm the high effectiveness of a comprehensive approach to the prevention of oropharyngeal candidiasis in young children. Hygienic measures aimed at reducing fungal and microbial load in the oral cavity play a critical role in preventing primary infection. Initiating oral hygiene practices from the first days of life—rather than waiting until teeth erupt—appears to be particularly beneficial.

Pharmacological prevention, including the topical use of antifungal agents (as indicated) and the administration of probiotics, contributes to maintaining microbial balance and strengthening local immune defense mechanisms. Of particular importance is the use of probiotic strains such as *Lactobacillus reuteri*, which have demonstrated effectiveness in preventing both fungal and bacterial infections in pediatric populations.

The low rate of side effects, good tolerability of the preventive regimen, and a significant reduction in disease recurrence further support the safety and practicality of this approach. These findings suggest that implementing standardized early preventive protocols for oral candidiasis can significantly reduce the incidence of fungal infections in outpatient pediatric care, improve patient outcomes, and ease the burden on families and healthcare providers.

Moreover, integrating these preventive strategies into routine care may be especially important in settings where infants are exposed to additional risk factors, such as antibiotic therapy, bottle feeding, or immunosuppressive conditions.



Overall, this study underscores the value of early, consistent, and multi-modal prevention to protect the health and well-being of young children.

Conclusion

The findings of this study strongly support the implementation of comprehensive hygienic and pharmacological preventive strategies in reducing the incidence of oropharyngeal candidiasis among children aged 0 to 3 years. By combining daily oral hygiene practices, proper sterilization of feeding utensils, maternal hygiene education, and the judicious use of antifungal agents and probiotics, a significant decrease in both the initial onset and recurrence of candidiasis was achieved. The effectiveness of this multifactorial approach lies in its ability to address several key risk factors simultaneously — including poor oral hygiene, disruption of the mucosal microbiome, and immature immune function — which are particularly relevant in early childhood. The intervention demonstrated not only clinical efficacy but also good safety, tolerability, and feasibility in outpatient settings. Importantly, these results emphasize the need for pediatricians, family physicians, and primary care providers to actively incorporate structured preventive protocols into early childcare routines. Doing so may help reduce the frequency of antifungal treatments, lower the risk of resistance development, and contribute to improved oral and general health outcomes during critical developmental stages.



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