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CENTER FOR INTERNATIONAL SCIENTIFIC PUBLICATIONS
JOURNAL OF APPLIED MEDICAL SCIENCES
ISSN(Online): 2984-6730
SJIF Impact Factor |(2024): 6.515|
Volume-7, Issue-4, Published |20-04-2024|

UDC 616.5-002.2-056.3-053.2

DIFFERENTIATED APPROACHES TO THE TREATMENT OF ATOPIC DERMATITIS COMPLICATED BY BACTERIAL, FUNGAL AND VIRAL INFECTION

https://doi.org/10.5281/zenodo.10978734

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ABSTRACT

The use of antibacterial and antimycotic therapy in children with AD complicated by secondary bacterial and fungal infections, which led to an overall therapeutic effect in 85.3% of cases, a 4-fold reduction in the frequency of exacerbations and 3.5-fold remission, allows stopping infection and skin inflammation.

Key words

Atopic dermatitis, secondary infection, therapy

Relevance: One of the current features of atopic dermatitis (AD) is the pathomorphosis of clinical manifestations associated with the formation of forms of the disease complicated by secondary infection [3,5,6]. It was found that the addition of bacterial and fungal skin infection in AD changes the symptoms of the disease and is characterized by a more severe course, a widespread process [1, 5]. According to [1,2,7], the addition of secondary skin infection in children with AD occurred in 25.0-34.0% of cases, according to the results of the study [3,7] - 35,7%. [7,8] It was noted that the addition of bacterial infection in AD was diagnosed in 12.5% of cases [4,7].В настоящееCurrently, the role of staphylococcus as the main etiological factor of these complications is widely discussed [5,6,8]. The study revealed that the structure of microbial colonization of the skin in children with AD complicated by secondary infection is dominated by staphylococci (37.9%) and staphylococcal-fungal associations (35.4%); at the same time, isolated colonization of the skin with staphylococci occurs mainly in children under 3 years of age, and in older children more often a fungal infection is layered [1,6].

The aim of the study was to study the effectiveness of therapy in children with various forms of atopic dermatitis in order to optimize treatment tactics and predict the course of the disease.

Materials and methods of research. To diagnose secondary complications, an in-depth clinical examination, culture mycological and bacteriological studies were

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performed from the affected skin areas, as well as determination of circulating candida antigen (CKA) in blood serum using an amperometric enzyme immunoassay sensor. We analyzed 80 clinical cases (45 boys, 35 girls) of atopic dermatitis in children admitted to the departments of the ODMMC in Andijan from 2021 to 2023, aged from 3 months to 14 years, while bacterial skin lesions occurred in 28 people (35.0%). All patients were divided into two groups: group A (p-48) - uncomplicated blood pressure, group B (p-32) - blood pressure complicated by pyoderma.

All patients underwent a complete clinical examination; the diagnosis was established in accordance with the classification established in the "National Conciliatory Document" for atopic dermatitis (by stages: infantile, adolescent; by prevalence of blood pressure: limited, widespread, diffuse; by severity: mild, moderate, severe; by stages: initial, pronounced changes, remission, or clinical recovery).

The effectiveness of antibacterial and antimycotic therapy in children with AD was evaluated on the basis of general and individual results, as well as the average duration of exacerbation and remission periods.

The individual therapeutic effect (ITE) was determined by the SCORAD (Severity Scoring of Atopic Dermatitis) index: a decrease of 50% or more – a high individual therapeutic effect, 20-49% – average, and less than 20% – its absence. The overall therapeutic effect (OTE) of the treatment was evaluated by the percentage of patients who showed a particular level of individual therapeutic effect. Patients were divided into the main group (40) and the control group (25). The differences in gender and age between the groups were statistically insignificant.

Results and discussions. Children of the main group received antimicrobial and antifungal drugs as part of complex therapy, while the control group received only traditional anti-allergic treatment without antifungal and antibacterial agents [5]. Treatment of children with complicated forms of AD was based on the results of bacteriological and mycological studies of the skin, taking into account the morphological nature of the rash, the severity of the process, the age of the child, and included external and systemic etiotropic therapy. External therapy for complicated forms of blood pressure in the main group was carried out according to the method developed by us in three stages (Table 1).

Table №. 1

Stages of external therapy for complicated forms of blood pressure in children with the presence of secondary infection

Stages	Characteristics of the stage	Preparations
I	Sanitation of secondary fungal and	Celestoderm-B (cream, ointment) 2 times a

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	ylococcal infections	zinc pyrithione - cream, aerosol 2 times a
II	External anti-inflammatory therapy combination with medical and etic skin care	Calcineurin inhibitors (protopic 0.03%) 2 a day in combination with moisturizers emollients
III	Therapeutic and cosmetic skin care	Moisturizers and emollients (Mustela Stell ia, topical cream, etc.) 2–3 times a day

Antibiotic therapy was prescribed to 11.9% of patients in the main group, taking into account the sensitivity of the pathogen (cephalosporins, fusidin sodium, macrolides). Systemic antibiotics were used for secondary bacterial skin infection with fever and intoxication, accompanied by inflammatory changes in the peripheral blood, as well as in the presence of clinical signs of deep staphyloderma (furunculosis, carbuncles, abscesses) and the absence of an effect from the use of topical external antibacterial agents for 3-5 days. In 28.6% of patients with staphylococcal skin colonization without clinical manifestation of infection and signs of superficial staphyloderma, treatment was limited to external therapy.

In the presence of fungal infection in 23 (57.5%) patients of the main group, in addition to staged external therapy, systemic antimycotics were used. Indications for their use were massive colonization of the skin with Candida fungi (CFU / cm2), development of invasive forms of candida infection (determination of CCA in blood serum), combined fungal associations (yeast-like and mold fungi), colonization of the skin with dermatomycetes in any concentrations, relapse of the disease after external therapy with moderate colonization with. Candida fungi, absence of the presence of the effect of external antimycotic therapy for 5 days.

Table №. 2

Scheme for prescribing systemic antimycotics for complicated forms of AD with fungal infection

Drugs selection	Indications	Assignment diagram
Itraconazal inside	1. Secondary skin infection caused by yeast fungi of the genus Candida, Rhodotorula, Mallassezia furfur, sensitive to the drug. 2. Colonization of the skin with dermatoycetes sensitive to the drug in children under 2 years of age	3–5 mg/kg daily for 7–14 days, then maintenance therapy at a dose of 150 mg per week No. 1–4 depending on the severity of the disease and the level of CKA in the blood serum
Exifin (lamisil) inside	1. Secondary skin infection caused by dermatomycetes and molds sensitive to the drug. 2. Secondary skin infection caused by yeast fungi of the genus	62.5 mg (1/4 tablet - 250 mg) per day from 2 to 5 years of age, 125 mg (1/2 tablet - 250 mg) per day; for mild cases the course is 10–14 days, for

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	Candida, Rhodotorula, with resistance to Diflucan and sensitivity to Lamisil	moderate cases – 2–3 weeks, for severe cases – 3–4 weeks
Combination intraconazal and lamisin inside	Colonization of the skin by association of several fungi (yeast-like, mold, mycelial) with different sensitivity to drugs	Intraconazole – 150 mg once a week No. 3–4. Lamisil in age-specific dosages once a day for 3–4 weeks

Systemic antimycotics were prescribed differentially, taking into account the type of pathogen, sensitivity to the antifungal drug, the level of CKA in the blood serum and the age of the child (Table 2). Evaluation of the clinical effectiveness of therapy showed that OTE in the main group of children was 86.2%, and the SCORAD index decreased 2.2 times (from 65 to 29.5 points), whereas in the control group – 9.3% and 1.4 times, respectively (from 64 to 45 points; $p<0.01$).

High ITE in the main group was observed in 57% of cases, while in the control group it was absent, and average-in 33% and 24%, respectively. The absence of an effect in the group of patients who received antibacterial and antimycotic therapy was noted 7.6 times less often (10%) than in children who did not receive it (78%; $p<0.001$). The duration of the exacerbation period in the main group of children with AD was reduced to 15 days, while in the control group it did not change and was more than 30 days. A study of long-term results based on the data of clinical observation for 1.5-2 years showed (Table. 3), that the average duration of remission in the main group increased 3.5 times and amounted to 9 months, while in the control group it was 2 months ($p<0.001$).

Table 3
Clinical effectiveness of treatment in children main and control groups

Groups	General therapeutic effect, %	Frequency exacerbations (per year)	Average duration remission (months)
Main	81,6	1,5	8
Control	8,5	5	2

The results of culture bacteriological and mycological examinations of the skin after treatment were negative in 80% of cases, and the level of CKA decreased to trace amounts in 71% of patients.

Conclusion. Thus, the use of antibacterial and antimycotic therapy in children with AD complicated by secondary bacterial and fungal infection leads to an overall therapeutic effect in 85.3% of cases, a 4-fold reduction in the frequency of

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exacerbations and a 3.5-fold prolongation of remission, allows timely relief of infection and skin inflammation, and prevention of severe AD.

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