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INTRODUCTION OF NEW DIAGNOSTIC METHODS OF ALLERGIC DERMATOSES IN THE KHOREZM REGION

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Abstract:

This article presents the results of the introduction of innovative methods for the diagnosis of allergic dermatoses in the Khorezm region. The increase in the incidence of allergic dermatitis is associated with the adverse effects of certain environmental factors. The most resistant to treatment and often recurrent forms of the disease are clinical forms in which there is sensitization to various bacterial factors, in particular to Staphylococcus spp.

Keywords: Allergic dermatitis, bacterial hypersensitization, Staphylococcus spp.

Allergic dermatitis is not only a medical, but also an economic problem, since it is the first manifestation of allergy, debuts in early childhood and is characterized by a recurrent course, and the frequency of hospitalizations and visits to the doctor about the deterioration of the condition indicates poor control of the disease. According to a number of reputable domestic and foreign researchers, the first manifestations of allergic dermatitis in at least 60% of cases occur in infancy, most often at three months, and in 85% – during the first 5 years [1]. Recent studies have shown that allergic dermatitis a serious clinical problem in both adults and young children[6].

The increased growth of allergic diseases in recent years requires the need to identify people at risk of allergies (atopy) at an early age, or even predict the occurrence of food allergies and atopic dermatitis during the mother's pregnancy. The development and clinical phenotypes of atopic diseases in childhood depend on a complex interaction between genetic and environmental factors, such as exposure to allergens, air pollution and infections. However, in addition to the genetic predisposition to allergic dermatitis, data are accumulating demonstrating the central role that the skin microbiome plays in the pathogenesis of allergic skin diseases[5].

It is a well-known fact that the development of various forms of allergic dermatitis depends on the interaction of internal and external factors. Microbial flora plays a certain role as trigger factors - Staphylococcus Aureus, Pityrosporum ovale, Candida, upper respiratory tract infections, etc. [2]. This is confirmed by positive immune tests (both skin and serological), as well as the detection of specific IgE to the specified flora.

With allergic dermatoses, golden and epidermal staphylococci are often colonized in pathological lesions[3]. Recent studies have shown that Staphylococcus aureus is present on the skin of newborns with atopic dermatitis in more than 90% of cases (in 78% - with dermatitis without damage and in 10% - on healthy skin). It is noted that the concentration of Staphylococcus Aureus correlates with the severity of the disease. In addition, bacterial virulence, such as methicillin resistant. aureus (MRSA) produces significantly more superantigens, which increase their ability to cause infection and more severe skin inflammation in patients with AlD. More recent studies show that the skin microbiome, including epidermal staphylococcus or other coagulase-negative staphylococci, may play an important role in the fight against skin infections caused by S. aureus in allergic dermatitis. An important aspect of Staphylococcusspp. this is their tendency to form biofilms, adhesive colonies attached to the surface that become very resistant to antibiotics and immune responses, and recent studies have shown that clinical isolates colonizing the skin with allergic dermatitis are often biofilm-positive. The formation of biofilms leads to the formation of complex bacterial communities that have a unique effect on keratinocytes and host immunity. It was found that biofilms S.aureus colonize the eccrine ducts of the allergic dermatitis skin, and these biofilms affect the secretion of keratinocyte cytokines and trigger differentiation and apoptosis of keratinocytes. These conditions can disrupt the barrier function and contribute to the pathogenesis of the disease, as well as sensitization of allergens [4].

Colonization of Staphylococcus aureus often manifests itself as serious skin infections in healthy people and becomes a global epidemic problem caused by the emergence of antibiotic-resistant strains, such as methicillin-resistant Staphylococcus aureus (MRSA). Staphylococcal toxin may also play a role in the

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development of skin lesions caused by the herpes simplex virus [7].

Further understanding of these painful processes may have important clinical significance for the prevention and treatment of skin infections in this common skin disease.

The purpose of our research was to study the indicators of bacterial sensitization of Staphylococcus aureus genotypes in allergic dermatitis patients living in the Khorezm region.

MATERIAL AND METHODS OF RESEARCH. We examined 53 patients with various clinical forms of allergic dermatitis aged from 5 to 73 years. All patients underwent clinical, microbiological and molecular genetic studies to determine methicillin-resistant. aureus (MRSA).

Clinical studies consisted in collecting anamnesis, examining the general condition and skin-pathological process, determining the severity according to the dermatological index of the scale of symptoms (DISHS). The microbiological study consisted in bacteriological seeding from the affected areas of the skin in patients with allergic dermatitis, molecular genetic analysis was carried out by polymerase chain reaction with the determination of the genotype of methicillin resistant type S. aureus

THE RESULTS OF THE STUDY. According to clinical forms , patients with allergic dermatitis are distributed as follows:28 (52.8%) patients were diagnosed with atopic dermatitis, 11 (20.7%) – various clinical forms of allergodermatoses and 14 (26.4%) patients were diagnosed with seborrheic dermatitis.

The study of age indicators of patients with allergic dermatitis revealed that persons under 14 years of age were 15 patients, 15-30 years - 15.31-50 years -9, and over 50 years - 14 patients. It should be noted that out of 53 patients, 36 (67.9%) noted the hereditary burden of the disease. 32 patients with atopic dermatitisnoted the seasonality of the disease, which was 60.3%, while 21 patients (39.6%) did not note such a pattern - the disease manifested year-round with frequent relapses.

Of the concomitant diseases, 32 (60.3%) patients had gastrointestinal diseases, anemia – 29 (54.7%), 31 (58.5%) - protozoal parasitic infection, 29 (54.7%) - pathology of the nervous system, 27 (50.9%) patients - diseases of the endocrine system. Allergic diseases (bronchial asthma, allergic rhinitis) mainly prevailed at the age of 15-30 years and accounted for 67.1% of the total number of patients.

The study of the severity of the dermatological index, which is calculated according to 9 clinical manifestations: erythema, edema, wetness, lichenification, papules, dry skin, peeling, cracks, itching. Each feature was evaluated from 0 to 36 points. There are 3 degrees of dermatological index: the light degree is estimated up to 15 points, the average from 16 to 25 points, the heavy degree – more than 25 points.

According to the dermatological index, patients with allergodermatoses were distributed as follows: 23 patients had a severe degree of the disease, which was 43.4%; 22 (41.5%) had an average degree of allergodermatosis and 8 (15.1%) had a mild degree of the disease.

Table 1. Indicators of DISH in patients with allergic dermatitis, depending on the clinical form of the disease

Groups	Severe	Medium	Mild
Atopic dermatitis n=30	12 (22,6%)	10 (18,9%)	8 (15,1%)
Allergic dermatitis n=11	4 (7,5%)	3 (5,6%)	4 (7,5%)
Seborrheic dermatitis n=12	7 (13,2%)	4 (7,5%)	1 (1,9%)
Total n=53	n=23	n=17	n=13

When studying the dermatological index, depending on the clinical form of the disease, the greatest number of severe and moderate degrees of the disease was revealed in patients with various clinical forms of atopic dermatitis (Table 1).

In order to study the microbiological status of the skin in patients with various clinical forms of allergodermatoses, bacteriological studies of the skin in the lesions and molecular genetic analysis of the genotypes of methicillin-resistant Staphylococcus aureus were carried out. The results of a

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microbiological study of the species identification of microorganisms showed a high frequency of seeding. S.Aureus was detected in 38 (71.7%) patients with allergic dermatitis, while S.Epidermidis was detected in 10 (18.8%) and S.Haemolyticus was detected in 5 (9.4%) patients with allergic dermatitis (Table 2).

Table 2. Characteristics of the Staphylococcusspp species spectrum. in patients with allergodermatoses, depending on the clinical form.

Allergic dermatitis	*S.Aureus*	*S.Epidermidis*	*S.Haemolyticus*
Atopic dermatitis n=30	23 (43,4%)	3 (5,6%)	2 (3,77%)
Allergic dermatitis n=11	8 (15,1%)	2 (3,77%)	1 (1,88%)
Seborrheic dermatitis n=12	7 (13,2%)	5 (9,4%)	2 (3,77%)
Total n=53	38 (71,7%)	10 (18,9%)	5 (9,4%)

Table 3. Indicators of Staphylococcusspp genotypes, depending on the clinical form of the disease.

St. aureus culture	Severe	Medium	Mild
MRSAn=22	2 (5%)	7 (17,5%)	13 (32,5%)
MSSAn=10	1 (2,5%)	3 (7,5%)	6 (15%)
MRCoNS n=8	2 (5%)	5 (12,5%)	1(2,5%)
Bcero n=40	n=5(12,5%)	n=15 (37,5%)	n=20 (50%)

As can be seen from Table 3, contaminants of St. aureus strains were detected in 40 patients with allergic dermatitis, which amounted to 75.4% of cases. Such contaminants as MRSA were detected in 55% of cases, MSSA– 25% and MRCONS in 20% of cases of allergic dermatitis. All carriers of methicillin-resistant Staphylococcusspp. they were distributed depending on the severity of the disease. Thus, the largest number of patients were patients with a severe degree of the disease of the MRSA contaminants – in 32.5% of cases, patients with an average degree of severity of the MRSA contaminants accounted for 17.5% of cases.

The data obtained indicate that the genotypes of Staphylococcusspp.play a certain role in the development of allergic dermatitis. Prolonged colonization of these microorganisms contributes to the development of persistent forms of allergic dermatitis. Thus, the results of the study showed that the severity of the clinical process does not depend on the microbiological status of the skin-pathological process.The results of this study prove the importance of studying opportunistic infection in allergic dermatitis.

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