

ATOPIC DERMATITIS AND THE DIGESTIVE TRACT

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Background. Within the last years the prevalence of allergic diseases is growing among children's pathologies [1,5,6,9]. Atopic dermatitis (AD) occupied an important place among those allergic diseases. The reason of it is that allergic dermatitis take 40-60% of allergic pathologies [3,4]. According to S.Z. Mavlyanova the prevalence of atopic dermatitis in Uzbekistan is equal to 37.1% (2019).

Studies showed that 75-80% of all sick children had disorders of intestinal flora [7,8,11]. Dysfunctions of gastrointestinal enzymes lead to intestinal wall and membranous malabsorption, and as a result the probability of introduction of bacterial and non-infectious allergens into a child's body increases.

According to the analyses provided in reference literature functional status of gastrointestinal tract and the development of its allergic reactions play the essential role in the development of chronic AD within the initial days of child's life [2,10].

The objective: to determine alterations in the status of gastrointestinal system in case of atopic dermatitis.

Materials and methods. We performed analysis of case histories of children diagnosed with atopic dermatitis at the allergology unit of the 1st Tashkent Medical Academy within 2017-2019 (table 1).

From the received data we can see that atopic dermatitis prevails mostly among children of 2-5 years old (55.1%) and more among girls (60.8%).

Table 1

Analysis of the patients based on the age and gender

No	ADn=212		
1	Mean age, years	2.9±0.1	
2	2-5 years old	117 (55.1%)	
	5-12 years old	63 (29.7%)	
	12-18 years old	32 (15.09%)	
	Gender	boys	83 (39.1%)

3		girls	129 (60.8%)
4	Severity degree to SCORAD index	Mild	175 (82.5%)
		Moderate	37 (17.4%)

For the detection of AD severity we applied SCORAD (Severity Scoring of Atopic Dermatitis) index [156]. That index is calculated according to the following formula:

$SCORAD = A/5 + 7 * B/2 + C$, where

A - square area of skin lesion (%);

B - total score of objective symptoms (erythema, swelling, moisture, excoriation, lichenification, peeling);

C - total score of subjective symptoms (itching, insomnia);

AD mild degree - score under 20 (exacerbation 1-2 times a year, long-lasting remission, good effect of the therapy).

AD moderate degree - 20-40 (exacerbation 3-4 times a year, remission less than 4 months, no distinct effect of the therapy);

Severe AD - above 40 (persistence of symptoms for a long term, remission for less than 2 months, ineffective therapy).

Every subjective symptom was scored from 0 to 10, after that the scores were summed up. Total score of subjective symptoms could vary from 0 to 20. For the objective assessment of the efficacy of the therapy SCORAD index was calculated before and after the therapy. In our study the severity of AD according to SCORAD index was as follows: 175 children with mild AD and 37 children with moderate AD.

Results of the study. It was determined that children suffering AD had hereditary predisposition to allergic pathologies from mother's side (72.3%). In both groups of children we determined that there were close relatives suffering gastrointestinal diseases (22.7%).

It was noted that allergic somatic pathologies observed in most of mother during pregnancy served the basis for the development of AD in their children. Different from comparison group mothers of the children suffering AD had chronic tonsillitis more often (29.2% versus 5.9 %) and 7.9 % of them had exacerbation of the diseases during pregnancy. Pregnancy with background chronic pyelonephritis was registered in 43.3% of 30 women from the basic group and in 20.0% of 20 women of the comparison group. According to statistical data some women from the basic group suffered acute respiratory diseases during

pregnancy (69.8 %), while in the comparison group that number was equal to 23.4 %. Among the women of the basic group 41.3 % had risk of miscarriage, while in the comparison group only 18.6% of the women had that kind of risk. Moreover, 18.6 % of the women from the basic group had cytomegalovirus infection, while in comparison group only 3.2 % of the women had the infection.

Among the examined children 64.9% had gastrointestinal complaints. The character of these complaints is presented in Figure 1. Most of the children suffered abdominal discomfort (59.3%), stomachache (32.1%), regurgitation (24.5%), and nausea (15.6%). Sometimes children complained about vomiting (12.8%), constipation (10.5%) or liquid stool (8.7%). At the same time, we observed similar lesions in the upper and lower parts of digestive system, but what is more important is that there were cases when lesions were observed at the same time in both parts.

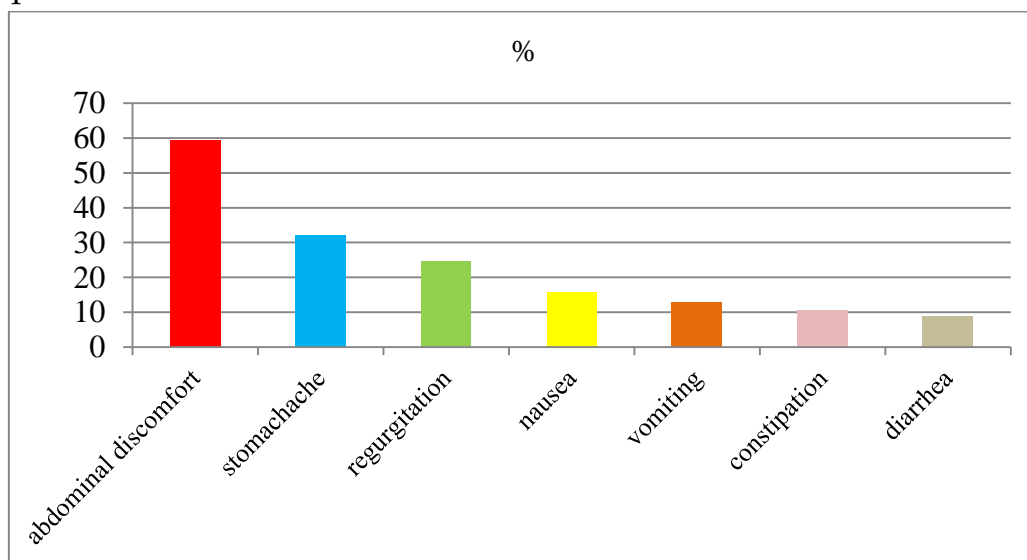


Figure 1. Character of gastrointestinal complaints in children suffering AD

Analysis of feces mostly showed such immediate markers of intestinal dysbiosis as fatty acids(41.5%),soap(43.9%), and indicators of intestinal malabsorption fibers (34.1%). Ultra sound of pancreas showed that 52.7% of the children it was enlarged. We determined alteration of intestinal micro biocoenosis in42.6 % of the patients.

The data obtained indicate the necessity of the introduction of modern methods of treatment in the standards of treatment of these diseases, which in turn requires a more in-depth study of the state of the gastrointestinal tract in these patients.

In order to study AD mechanisms of development in-depth we performed analysis of correlations between clinical symptoms of the pathology and gastrointestinal complaints within the scope of this study. As a result, we determined positive correlations of various strength between clinical symptoms of atopic dermatitis and stomachache, but these symptoms were also correlated to itching and insomnia (+0.440 and +0.463). There was correlation between these symptoms and nausea (+0.445 and + 0.381). That is why we suppose there some mechanisms linking atopic dermatitis progression with development of gastrointestinal symptoms.

Bacteriological tests of feces showed high titers of Staphylococcus aureus and Klebsiella pneumoniae (10^5 - 10^{10}) in children with AD. In the beginning of the disease clinical alterations and allergic process progression differed much dependently on certain types of conditionally pathological flora. In young age detection of Staphylococcus aureus was manifested in intestinal colic and mucous in feces.

Conclusion. The data about the role of digestive system plays in the development of AD show the necessity of the introduction of modern methods of treatment in the standards of treatment of these diseases, which in turn requires a more in-depth study of the state of the gastrointestinal tract in these patients.

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