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### **THE RESULTS OF TREATMENT OF ALLERGIC DERMATOSIS ASSOCIATED WITH INTESTINAL PARASITOSEs**

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The article presents information on the results of the treatment of allergic dermatosis associated with intestinal parasitoses against the background of normal intestinal microflora and against the background of dysbacteriosis.

The intestinal microflora was studied in 73 patients with only allergic dermatosis and 108 patients with allergic dermatosis associated with intestinal parasitoses before and after the treatment.

General and biochemical tests of blood, urine, and feces of these patients were performed using generally accepted laboratory research methods.

In order to clarify the role of intestinal parasitoses in the clinical course of allergic dermatoses associated with intestinal parasitoses and assess their impact on the treatment, the patients were divided into 2 treatment groups. Group I – 63 patients with allergic dermatosis associated with intestinal parasitoses were treated comprehensively for both pathologies; Group II – 45 patients with allergic dermatosis associated with intestinal parasitoses were treated only for allergic dermatoses.

The results of the study showed that after treatment of allergic dermatoses associated with intestinal parasitoses against the background of normal microflora, there was a decrease in clinical signs by 3–4 times, and against the background of dysbacteriosis – by 2 times. It was also revealed that the effectiveness of complex treatment of allergic dermatoses associated with intestinal parasitoses ( $70,80 \pm 5,59$  %) is significantly higher than the effectiveness of treatment only for allergic dermatoses ( $27,91 \pm 6,79$  %).

**Key words:** *allergic dermatosis, atopic dermatitis, urticaria, eczema, acne vulgaris, intestinal parasitoses, complex treatment, clinical signs.*

Despite significant advances in medicine, including ones in the field of treatment of skin diseases, effective treatment of certain types of dermatosis has not yet found its final solution and continues to be one of the most difficult health problems. The results of dermatosis treatment depend on their type, etiology, clinical course, capacity of the pathological processes occurring in the skin, hereditary and immunological factors, associated diseases, microflora of the digestive system and skin, psychological aspects and environmental factors [1, 5, 8].

The treatment of each patient should be carried out individually, taking into account the psychological state of the patient. As a rule, the treatment of dermatosis is carried out in three directions - cosmetic care, external anti-inflammatory therapy, elimination of the etiological factors causing the complication [3, 6, 12].

Atopic dermatitis is the most common form of allergic dermatosis. Depending on the genesis and clinical form of the disease, the main focus of treatment of atopic dermatitis is the local use of topical anti-inflammatory drugs [9].

The effectiveness of external use of corticosteroid drugs in the treatment of dermatoses, and, in particular, atopic dermatitis, has been proven by many years of practice. The combined effect of these drugs is effective both at the initial stage of allergic inflammation of the skin, and the subsequent stages of the disease [9].

Recently, in a number of foreign countries, as well as in Azerbaijan, calcineurin inhibitors (pimecrolimus, tacrolimus), which, unlike corticosteroids, do not have harmful effects, are used as anti-inflammatory drugs [10, 14, 15]. Calcineurin inhibitors have immunomodulatory effects and do not lead to immunosuppression [2, 11].

Recently, along with an increase in the incidence of dermatoses, the proportion of dermatoses associated with allergies and infections has increased significantly. For example, the skin of 80,0 % of people with atopic dermatitis is damaged by streptococcus, staphylococcus, and Candida (fungus) [7].

The use of the Skin-Cap drug (Activated Zinc Pyrithione) is widespread among the topical anti-inflammatory drugs that are used locally. This drug is an alternative to the main anti-inflammatory drugs [13].

Antihistamines of a new generation (Fexofenadinum, Cetirizine, Desloratadine, Loratadine) are used to get rid of pruritus with dermatoses. Such drugs do not cause tachyphylaxis, do not create sedative or cardiotoxic effects, do not cause M-cholinolytic activity, and are selective for H1 receptors. Particular attention is attracted by the fact that Cetirizine from this group of drugs may also be used to children. Cetirizine not only blocks the H1 receptors and has an anti-inflammatory effect, but also inhibits the last stage of the allergic inflammatory process [4].

In this regard, during the treatment of dermatosis, it is necessary to take into account etiological factors and associated diseases, especially infectious and parasitic diseases, since these pathologies aggravate the clinical process of dermatosis and play an important role in the occurrence of allergic dermatosis.

**The purpose of the research** is to study the results of treatment of patients with allergic dermatosis associated with intestinal parasitoses against the background of the normal intestinal microflora and against the background of dysbacteriosis.

**Material and methods of the research.** Studies were conducted at the Department of Dermatovenereology of Azerbaijan Medical University, Republican Skin and Venereal Diseases Dispensary and Baku Dispensary of Skin and Venereal Diseases. All laboratory tests were performed at the “Omur” clinic.

Patients with “Allergic dermatosis” at the department of Dermatovenereology of Azerbaijan Medical University and Baku Dispensary of Skin and Venereal Diseases were also examined for intestinal parasitoses.

The intestinal microflora was studied in 73 patients with only allergic dermatosis and 108 patients with allergic dermatosis associated with intestinal parasitoses. General and biochemical tests of blood, urine, and feces of these patients were performed using generally accepted laboratory research methods.

Sanitary-helminthological and coprological examinations were used (smear test, Kato and Miura method, Kalantarov method and special sanitary-helminthological examination method – Graham method). Formalin-ether sedimentation was used as protozoological and coprological methods of research. Serological methods (detection of specific lamblia antibodies in the blood by an Immunoassay method (set of DRG Giardia lamblia. Antigen (Stool). ELISA, Germany), detection of specific ascaridia antibodies in the blood by an immunoassay method (set of DRG Ascaris lumbricoides IgG, ELISA, Germany) were also used.

Bacterial skin testing and stool screening test were performed by bacteriologists in special bacteriology laboratories using internationally accepted microbiological methods.

The digital results of the study were statistically processed according to modern requirements. To do this, linear discriminant analysis, variational analysis and analysis of variance were used. All calculations were carried out in the EXCEL-2010 and in the SPSS-20 program.

**The study results and discussion.** For the clinician, the main factor influencing treatment outcome of allergic dermatosis is to maximally clarify the etiological factors of the pathology and to consider diseases associated. It should be noted that such intestinal parasitoses as ascariasis, enterobiasis (pinworm infection), strongyloidiasis, trichuriasis, giardiasis (beaver fever) were identified in the course of work. Atopic dermatitis, urticaria, eczema and acne vulgaris were identified as allergic dermatoses. The age of patients ranged from 2 to 70 years.

The study of the effect of parasitoses and intestinal dysbiosis on the occurrence and course of allergic dermatoses is especially important in the framework of an integrated treatment of patients. Considering this, in our research allergic dermatoses were treated taking into consideration the intestinal parasitoses, which plays an important role in the pathogenesis of the disease, as well as treatment of this pathology against the background of normal intestinal microflora. For this purpose, 73 patients were treated only for allergic dermatoses, and 108 patients for both allergic and parasitic diseases, taking into account the intestinal microflora. Each patient was treated individually according to the type of allergies and intestinal parasitoses.

Various schemes of complex treatment of allergic dermatoses against the background of intestinal parasitosis were tested: antihistamines, desensitization anthelmintic drugs. Antihistamines: Desloratadine, Ebastine, Zyrtec, Claritin. Enterosorbents: Enterosgel, Polyphepan, Enterumin, Algisorb, Lactofiltrum.

The results of the treatment were evaluated on the basis of clinical signs. The best results were obtained with the use of anthelmintic drugs: for enterobiasis – Albendazole, Mebendazole, Pyrantel; for ascariasis, trichuriasis, strongyloidiasis: Levamisole, Mebendazole; in Giardiasis: Makmiror, Tiberol, Mebendazole, Nifuratel.

The results of the treatment of allergic dermatosis associated with intestinal parasitoses against the background of normal microflora and against the background of dysbacteriosis. The efficacy of treating allergic dermatosis associated with intestinal parasitoses in 35 patients against the background of normal intestinal microflora was studied (Table 1).

Table 1

**The results of the treatment of allergic dermatosis associated with intestinal parasitoses against the background of normal microflora**

Clinical signs	Before treatment n = 35		After treatment n = 35		p
	abs.	%	abs.	%	
1	2	3	4	5	6
Skin rashes	15	42,86 ± 8,37	5	14,29 ± 5,92	< 0,01
Erythematous lesion	17	48,57 ± 8,45	6	17,14 ± 6,37	< 0,01
Skin edema, infiltration	13	37,14 ± 8,17	4	11,43 ± 5,38	< 0,05
Skin dryness	14	40,0 ± 8,28	5	14,29 ± 5,92	< 0,05
Common allergy symptoms (papular rashes, redness, scaling skin)	20	57,14 ± 8,37	7	20,0 ± 6,76	< 0,001

Table 1 Continuation

1	2	3	4	5	6
Lichenification	8	22,86 ± 7,10	3	8,57 ± 4,73	> 0,05
Excoriation	10	28,57 ± 7,64	3	8,57 ± 4,73	< 0,05
Skin desquamation	14	40,0 ± 8,28	5	14,29 ± 5,92	< 0,05
Damage of 5,0–10,0 % of the skin	18	51,43 ± 8,45	6	17,14 ± 6,37	< 0,01
Damage of 10,0–20,0 % of the skin	7	20,0 ± 6,76	2	5,71 ± 3,92	> 0,05
Damage of 20,0–30,0 % of the skin	5	14,29 ± 5,92	2	5,71 ± 3,92	> 0,05
Nausea	18	51,43 ± 8,45	6	17,14 ± 6,37	< 0,01
Diarrhea	8	22,86 ± 7,10	3	8,57 ± 4,73	< 0,05
Constipation	7	20,0 ± 6,76	2	5,71 ± 3,92	> 0,05
Headaches	10	28,57 ± 7,64	4	11,43 ± 5,38	< 0,05
Hepatomegaly	22	62,86 ± 8,17	14	40,0 ± 7,28	< 0,05
Bruxism	14	40,0 ± 8,28	6	17,14 ± 6,37	< 0,05
Insomnia	16	45,71 ± 8,42	5	14,29 ± 5,92	< 0,01
Abdominal pain	18	51,43 ± 8,45	6	17,14 ± 6,37	< 0,01

As it can be seen from this table, after the treatment of allergic dermatoses associated with intestinal parasitoses against the background of normal microflora, there was a significant decrease in clinical signs. So, skin rashes (42,86 ± 8,37 %), erythematous lesion (48,57 ± 8,45 %), edema, skin infiltration (38,14 ± 8,17 %), skin dryness (40,0 ± 8,28 %), common allergy symptoms (papular rashes, redness, scaling skin) (57,14 ± 8,37 %) decreased by 3 times after treatment (14,29 ± 5,92 %, p < 0,01; 17,14 ± 6,37 %, p < 0,01; 11,43 ± 5,38 %, p < 0,05; 14,29 ± 5,92 %, p < 0,05; 20,0 ± 6,76 %, p < 0,001, respectively).

Signs such as skin rashes (40,0 ± 8,28 %) and damage of 5,0–10,0 % of the skin (51,43 ± 8,45 %) decreased by 2–3 times after treatment (14,29 ± 5,92 %, p < 0,05, 17,14 ± 6,37 %, p < 0,01, respectively).

There was a decrease in other clinical signs to 2–3 times (nausea, diarrhea, constipation, headaches, bruxism, insomnia, abdominal pain).

After treatment, a relative decrease in hepatomegaly was also observed (from 62,86 ± 8,17 % to 40,0 ± 8,28 %, p < 0,05).

In this study, the results of treatment of allergic dermatosis associated with intestinal parasitoses, in the presence of dysbacteriosis, were also investigated. For this purpose, 73 patients with allergic dermatosis associated with intestinal parasitoses were treated (Table 2).

Table 2

**The results of the treatment of allergic dermatosis associated with intestinal parasitoses against the background of dysbacteriosis**

Clinical signs	Before treatment n = 73		After treatment n = 73		p
	abs.	%	abs.	%	
Skin rashes	59	80,82 ± 4,61	30	41,09 ± 5,76	< 0,001
Erythematous lesion	54	73,97 ± 5,14	28	38,36 ± 5,69	< 0,001
Skin edema, infiltration	44	60,27 ± 5,73	23	31,51 ± 5,44	< 0,001
Skin dryness	52	71,23 ± 5,30	27	36,99 ± 5,65	< 0,001
Common allergy symptoms (papular rashes, redness, scaling skin)	68	93,15 ± 2,96	35	47,95 ± 5,85	< 0,001
Lichenification	18	24,66 ± 5,04	9	12,33 ± 3,85	> 0,05
Excoriation	29	39,73 ± 5,73	15	20,55 ± 4,73	< 0,01
Skin desquamation	49	67,12 ± 5,50	26	35,62 ± 5,61	< 0,001
Damage of 5,0–10,0 % of the skin	59	80,82 ± 4,61	30	41,09 ± 5,76	< 0,001
Damage of 10,0–20,0 % of the skin	26	35,62 ± 5,61	14	19,18 ± 4,61	< 0,05
Damage of 20,0–30,0 % of the skin	12	16,44 ± 4,34	6	8,22 ± 3,22	> 0,05
Nausea	55	75,34 ± 5,05	29	39,73 ± 5,73	< 0,001
Diarrhea	34	46,58 ± 5,84	18	24,66 ± 5,05	< 0,01
Constipation	32	43,84 ± 5,81	17	23,99 ± 4,95	< 0,05
Headaches	22	30,14 ± 5,37	11	15,07 ± 4,19	< 0,05
Hepatomegaly	67	91,78 ± 3,22	35	47,95 ± 5,85	< 0,001
Bruxism	29	39,73 ± 5,73	15	20,55 ± 4,73	< 0,01
Insomnia	35	47,95 ± 5,85	18	24,66 ± 5,05	< 0,01
Abdominal pain	61	83,56 ± 4,34	32	43,84 ± 5,81	< 0,001

As it can be seen from this table, after the treatment of allergic dermatoses associated with intestinal parasitoses on the background of dysbacteriosis, there was a significant decrease in many clinical signs. For example, skin rashes ( $80,82 \pm 4,61$  %) decreased by 2 times after treatment ( $41,09 \pm 5,76$  %,  $p < 0,001$ ).

A similar situation was observed with respect to erythematous lesion ( $73,97 \pm 5,14$  %), edema, skin infiltration ( $60,27 \pm 5,73$  %), skin dryness ( $71,23 \pm 5,30$  %), common allergy symptoms (papular rashes, redness, scaling skin) ( $93,15 \pm 2,96$  %), skin desquamation ( $67,12 \pm 5,50$  %), damage of 5,0–10,0 % of the skin and other signs ( $38,36 \pm 5,67$  %,  $p < 0,001$ ;  $31,51 \pm 5,44$  %,  $p < 0,001$ ;  $36,99 \pm 5,65$  %,  $p < 0,001$ ;  $47,95 \pm 5,83$  %,  $p < 0,001$ ;  $35,62 \pm 5,61$  %,  $p < 0,001$ ;  $41,09 \pm 5,76$  %,  $p < 0,001$ , respectively).

After the treatment of allergic dermatoses associated with intestinal parasitoses against the background of normal microflora there was a decrease in clinical signs by 3–4 times, but after the treatment of allergic dermatoses associated with intestinal parasitoses against the background of dysbacteriosis, there was a decrease in similar clinical signs only by 2 times.

In general, the effectiveness of the treatment of allergic dermatoses associated with intestinal parasitoses against the background of normal microflora averaged  $65,85 \pm 7,41$  %; against the background of dysbacteriosis –  $47,95 \pm 5,85$  %.

The results of treatment of allergic dermatosis associated with intestinal parasitoses depending on the type of treatment (1. Comprehensive treatment of both pathologies; 2. Treatment only for allergic dermatosis).

In order to further clarify the role of intestinal parasitoses in the clinical course of allergic dermatosis associated with intestinal parasitoses and assess their impact for the treatment, the patients were divided into 2 groups of treatment. For this purpose, 63 patients with allergic dermatosis associated with intestinal parasitoses were treated comprehensively (both allergic dermatoses and intestinal parasitoses were treated). 45 patients with allergic dermatosis associated with intestinal parasitoses were treated only for allergic dermatosis (Table 3).

Table 3

**The results of the treatment of allergic dermatosis associated with intestinal parasitoses, depending on the type of treatment**

Clinical signs	Clinical signs before treatment n = 108		Clinical signs after treatment				p
			Comprehensive treatment with the addition of anti-parasitic drugs n = 63		Treatment only for dermatosis n = 45		
	abs.	%	abs.	%	abs.	%	
Skin rashes	74	$68,52 \pm 4,47$	10	$15,87 \pm 4,60$	25	$55,56 \pm 7,41$	$< 0,001$
Erythematous lesion	71	$65,74 \pm 4,57$	10	$15,87 \pm 4,60$	24	$53,33 \pm 7,44$	$< 0,001$
Skin edema, infiltration	57	$52,78 \pm 4,80$	8	$12,70 \pm 4,20$	19	$42,22 \pm 7,36$	$< 0,001$
Skin dryness	66	$61,11 \pm 4,69$	12	$19,04 \pm 4,95$	20	$44,44 \pm 7,41$	$< 0,01$
Common allergy symptoms (papular rashes, redness, scaling skin)	88	$81,48 \pm 3,74$	15	$23,81 \pm 5,37$	27	$60,0 \pm 7,30$	$< 0,001$
Lichenification	26	$24,07 \pm 4,11$	5	$9,52 \pm 3,40$	6	$13,33 \pm 5,07$	$> 0,05$
Excoriation	39	$36,11 \pm 4,62$	5	$7,94 \pm 3,41$	13	$28,89 \pm 6,76$	$< 0,01$
Skin desquamation	13	$58,33 \pm 4,74$	12	$19,05 \pm 4,95$	19	$42,22 \pm 7,36$	$< 0,01$
Damage of 5,0–10,0 % of the skin	77	$71,30 \pm 4,35$	13	$20,64 \pm 5,10$	23	$51,11 \pm 7,45$	$< 0,001$
Damage of 10,0–20,0 % of the skin	33	$30,56 \pm 4,43$	8	$12,70 \pm 4,20$	8	$17,78 \pm 5,70$	$> 0,05$
Damage of 20,0–30,0 % of the skin	17	$15,74 \pm 3,50$	3	$4,76 \pm 2,68$	5	$11,11 \pm 4,69$	$> 0,05$
Nausea	73	$67,59 \pm 4,50$	10	$15,87 \pm 4,60$	25	$55,56 \pm 7,41$	$< 0,001$
Diarrhea	42	$38,89 \pm 4,69$	6	$9,52 \pm 3,40$	15	$33,33 \pm 7,03$	$< 0,01$
Constipation	39	$36,11 \pm 4,62$	5	$7,94 \pm 3,41$	14	$31,11 \pm 6,90$	$< 0,01$
Headaches	32	$29,63 \pm 4,39$	4	$6,34 \pm 3,07$	11	$94,44 \pm 6,47$	$< 0,05$
Hepatomegaly	89	$82,41 \pm 3,67$	14	$22,22 \pm 5,24$	35	$77,78 \pm 6,90$	$< 0,001$
Bruxism	43	$39,82 \pm 4,71$	6	$9,52 \pm 3,40$	15	$33,33 \pm 7,03$	$< 0,01$
Insomnia	51	$47,22 \pm 4,80$	7	$11,11 \pm 3,96$	16	$35,56 \pm 7,14$	$< 0,01$
Abdominal pain	79	$73,15 \pm 4,26$	11	$17,46 \pm 4,78$	27	$60,0 \pm 7,30$	$< 0,05$

As it can be seen from this table, the results of the treatment, taking into account intestinal parasitoses, are much more effective than the results of treatment only of allergic dermatosis. For example, before treatment skin rashes was detected in  $68,52 \pm 4,47$  % of patients, and after complex treatment of parasitoses and allergic dermatosis, these symptoms were identified in  $15,87 \pm 4,60$  % of cases, and in the treatment only for dermatoses –  $55,56 \pm 7,41$  % ( $p < 0,001$ ) cases. There were  $65,74 \pm 4,57$  % of patients with erythematous elements before treatment, these numbers were decreased to  $15,87 \pm 4,60$  % after complex treatment, and in the case of treatment only for allergic dermatosis these numbers changed to –  $53,33 \pm 7,44$  % ( $p < 0,001$ ).

Such signs as skin edema and infiltration ( $12,70 \pm 4,20$  %), skin dryness ( $19,04 \pm 4,95$  %), general allergy symptoms (papular rashes, redness, scaling skin) ( $23,81 \pm 5,37$  %), skin desquamation ( $19,05 \pm 4,95$  %), damage of 5,0–10,0 % of the skin ( $20,64 \pm 5,10$  %), nausea ( $15,87 \pm 4,60$  %), diarrhea ( $9,52 \pm 3,40$  %), constipation ( $7,94 \pm 3,41$  %), headaches ( $6,34 \pm 3,04$  %), bruxism ( $9,52 \pm 3,40$  %), insomnia ( $11,11 \pm 3,96$  %), abdominal pain ( $17,46 \pm 4,78$  %) decreased by 2–3 times in patients receiving complex treatment ( $42,22 \pm 7,36$  %,  $p < 0,001$ ;  $44,44 \pm 7,41$  %,  $p < 0,01$ ;  $60,0 \pm 7,30$  %,  $p < 0,001$ ;  $42,22 \pm 7,36$  %,  $p < 0,01$ ;  $51,11 \pm 7,45$  %,  $p < 0,001$ ;  $55,56 \pm 7,41$  %,  $p < 0,001$ ;  $33,33 \pm 7,03$  %,  $p < 0,01$ ;  $31,11 \pm 6,90$  %,  $p < 0,01$ ;  $24,44 \pm 6,41$  %,  $p < 0,05$ ;  $33,33 \pm 7,03$  %,  $p < 0,05$ ;  $35,56 \pm 7,14$  %,  $p < 0,01$ ;  $60,0 \pm 7,30$  %,  $p < 0,05$ ), compared with patients who received treatment only for allergic dermatosis.

In patients treated with complex treatment, signs of hepatomegaly ( $22,22 \pm 5,24$  %) also showed better results in comparison with those who were treated only for allergic dermatoses ( $77,78 \pm 6,20$  %,  $p < 0,001$ ).

Summing up the above, we can say that the role of intestinal parasitoses in the clinical course and treatment of allergic dermatosis is very significant. In this regard, patients with allergic dermatosis should be screened for the presence of intestinal parasitoses, and those with parasitic infections should receive a comprehensive treatment for both pathologies.

**Conclusion.** During the research, the significant role of intestinal parasitoses in the clinical course and treatment of allergic dermatoses was revealed. The results of the study showed that after treatment of allergic dermatoses associated with intestinal parasitoses against the background of normal microflora, there was a decrease in clinical signs by 3–4 times, and against the background of dysbacteriosis – by 2 times. It was also revealed that the effectiveness of complex treatment of allergic dermatoses associated with intestinal parasitoses ( $70,80 \pm 5,59$  %) is significantly higher than the effectiveness of treatment only for allergic dermatoses ( $27,91 \pm 6,79$  %).

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## **ФИЗИЧЕСКОЕ РАЗВИТИЕ ДЕТЕЙ ПЕРВЫХ ДВУХ ЛЕТ ЖИЗНИ, РОДИВШИХСЯ ОТ МАТЕРЕЙ С ИЗБЫТОЧНОЙ МАССОЙ ТЕЛА И ОЖИРЕНИЕМ**

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