

RESULTS OF IMMUNE STATUS IN SICK CHILDREN WITH NEURODERMITIS USING ACUNE REFLEX THERAPY AND EXTERNAL THERAPY

A.B.Pakirdinov¹ 

1. Andijan State Medical Institute, Andijan, Uzbekistan.

OPEN ACCESS
IJSP**Correspondence**

A.B. Pakirdinov, Andijan State Medical Institute, Andijan, Uzbekistan.

e-mail: adham888777@gmail.com

Received: 05 July 2023

Revised: 14 July 2023

Accepted: 25 July 2023

Published: 31 July 2023

Funding source for publication:

Andijan state medical institute and I-EDU GROUP LLC.

Publisher's Note: IJSP stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.**Copyright:** © 2022 by the authors. Licensee IJSP, Andijan, Uzbekistan. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY-NC-ND) license (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).

Abstract. Increasing the effectiveness of the treatment of dermatological patients with neurodermitis is an important social task. This is due to the significant spread of a number of dermatoses and the severe course of some of them. The traditional methods of treatment currently used in dermatology are far from always effective, and sometimes they themselves are associated with a variety of side effects and complications, sometimes very severe. In this regard, the great interest that is manifested in non-drug methods of therapy is understandable. One of these methods is acupuncture. **Purpose of the study.** To study immunological indicators in children with neurodermitis and develop a method of corrective therapy in the process of acupuncture with the use of broncho-munal. **Materials and research methods.** 32 children with neurodermitis aged 12 to 14 years were under observation. The results of the studies allow us to conclude that acupuncture has a normalizing effect on the parameters of the humoral link of the immune system of girls with neurodermitis. The question arises about the possible mechanisms of such action of acupuncture. In addition to the well-known general effects of acupuncture on the human body in the form of stimulation of the function of the adrenal cortex, the central nervous system, a decrease in the level of certain biologically active substances, the possibility of a direct effect of acupuncture on some lymphoid organs through the acupuncture points responsible for them is not excluded. **Conclusions:** In the pathogenesis of sick children with neurodermitis, there is a change in the functional activity of the humoral link of immunity, expressed in an increase in the level of serum IgE. Acupuncture, being an effective method of treating girls with neurodermitis, has a normalizing effect on some of the altered parameters of the humoral immunity in children with neurodermitis. expressed in an increase in the level of serum IgE. Acupuncture, being an effective method of treating girls with neurodermitis, has a normalizing effect on some of the altered parameters of the humoral immunity in children with neurodermitis. expressed in an increase in the level of serum IgE. Acupuncture, being an effective method of treating girls with neurodermitis, has a normalizing effect on some of the altered parameters of the humoral immunity in children with neurodermitis.

Key words. neurodermit, acupuncture, immunoglobulins - A, M, G, E.

Increasing the effectiveness of the treatment of dermatological patients with neurodermitis is an important social task. This is due to the significant spread of a number of dermatoses and the severe course of some of them. The traditional methods of treatment currently used in dermatology are far from always effective, and sometimes they themselves are associated with a variety of side effects and complications, sometimes very severe. In this regard, the great interest that is manifested in non-drug methods of therapy is understandable. One of these methods is acupuncture.

Neurodermitis, a genetically determined chronic allergic disease, is one of the most severe and common dermatoses. First detected in early childhood, it takes a chronic relapsing course and later manifests itself in adults, it is difficult to treat. Therefore, the issue of developing new pathogenetic methods for the treatment of neurodermitis is very relevant.

In the pathogenesis of neurodermitis, in addition to genetic predisposition factors, one of the leading places is occupied by allergic mechanisms and dysfunction of the humoral immunity factor. However, studies of immunological parameters conducted by numerous authors are often contradictory and often do not have an accurate, complete explanation. So, for example, shifts in some indicators of humoral immunity, in particular the content of serum IgA, IgG, IgM, do not yet find a sufficiently accurate explanation and are sometimes contradictory(1–9). Among the immunoglobulins detected in significantly elevated concentrations, IgE, which is an important marker of neurodermitis, is the most common. Currently, there are many works indicating an increased content of IgE - antibodies in individuals suffering from neurodermitis(7,10,11), and the pathogenic role of elevated IgE in neurodermitis in most authors is not in doubt(1,11). Functional

impairment of the nervous system is of great importance in the pathogenesis of neurodermitis. Recent studies confirm the presence of functional disorders in patients with neurodermitis, both in the central and autonomic nervous systems, manifested by weakness and inertness of the irritable and inhibitory processes, and a decrease in the mobility of cortical processes. Neurotic disorders are of great pathogenetic significance and aggravate the course of the disease; there is a relationship between the severity of the skin process and functional disorders of the nervous system. A vicious circle is observed: the severe course of neurodermitis supports neurotic disorders, and the latter worsen the course of neurodermitis. All this suggests that acupuncture occupies a certain place in the treatment of atopic dermatitis, the therapeutic effect of which is based on reflex mechanisms. At the same time, the reaction of the nervous system to acupuncture consists of three interrelated components: local, segmental and general.

Antiallergic action is a component of the general reaction, acupuncture is carried out in many ways: a normalizing effect on the central nervous system, stimulation of the adrenal cortex, an increase in the content of adrenaline and glucocorticoids in the blood, a decrease in the level of histamine, serotonin and other biologically active substances. The above neurohumoral mechanisms have a significant impact on the development and course of the allergic process.

Materials and methods of research: Under observation were 39 sick children with neurodermitis aged 12 to 14 years. The disease in all patients began in childhood and was characterized by manifestations of exudative diathesis, erythema, scales, weeping, periods of exacerbation alternated with periods of remission, and later at the age of 12 a classic picture of neurodermitis developed in the form of varying degrees of severity of erythema, flexion lichenification, lichenoid papules, dryness and peeling in the face, neck, upper chest and back, elbow and knee folds, most patients had white dermatographism. Severe, biopsy itching was characteristic of all patients. The severity of symptoms varied to varying degrees, with periods of deterioration and remission. Of the concomitant diseases, vasomotor-allergic rhinitis was detected in 1 patient,

To assess the state of the humoral immunity, the concentrations of serum immunoglobulins of classes A, G, M, E were determined in patients. Immunoglobulins of classes A, G and M were determined by the method of radial immunodiffusion proposed by Mancini et al (1965). The control group consisting of 10 healthy individuals: IgA was equal to - 1.8±0.1 g/l; IgG - 10.7±0.3 g/l; IgM - 1.1±0.04 g/l. The content of IgE was studied using enzyme immunoassay. The indicators of total IgE obtained using the same technique in almost 10 healthy girls (120.0±3.47 IU/ml) were taken as the norm. This method was developed by ABBOTT (USA).

Research results: The mean values of the levels of immunoglobulins A, G, M in children with neurodermitis before treatment did not significantly differ from normal values. An increase in the level of IgG was found in 14 (43.7%) patients. Of particular interest was the study of total IgE in patients with neurodermitis. In most patients during the period of exacerbation, a pronounced hyperproduction of IgE was found. The highest average level of IgE was observed in sick children with moderate severity of the disease (Table 1).

Table 1.

Dynamics of the content of total IgE (IU / ml) in blood serum in sick children with neurodermitis in the process of acupuncture (M±m)

| Group of patients | 1st course of treatment | | 3rd course of treatment | |
|----------------------------------|-------------------------|-----------------------|-------------------------|----------------------|
| | Before treatment | After treatment | Before treatment | After treatment |
| Medium - severe severity n=19 | 754.6±18.9 P<0.001 | 850.3±18.3 P<0.001 | 457.6±16.0 P<0.05 | 493.2±14.7 P<0.05 |
| Severe severity n = 13 | 480.3±65.0 P<0.05 | 582.1±64.6 P<0.05 | 467.6±68.5 P<0.05 | 563.4±62.7 P<0.05 |
| Control: n = 10 | 36.8±3.8 | 36.8±3.8 | 36.8±3.8 | 36.8±3.8 |

In 7 sick children with a severe form of the disease, the content of IgE in the blood was normal or slightly elevated. These patients had concomitant diseases in the form of allergic rhinitis (1 patient), chronic gastroduodenitis (1), chronic colitis (1). It is possible that in this group of sick girls, the presence of concomitant diseases could affect the production of IgE.

After assessing the immune status, all patients underwent acupuncture by the classical method of irritation, acupuncture points using special needles made of nichrome or silver. Acupuncture points were selected individually, taking into account the clinical picture of the disease and the localization of the skin process. Were used corporal and auricular acupuncture points, during one session - no more than 6 - 7 points. 10-15 daily procedures were prescribed for the course of treatment. Patients received 2-3 courses, depending on the indications.

Repeated courses of acupuncture with a good effect after the 1st course were carried out after 1 month, and in the absence of a pronounced therapeutic effect - after 10 days.

Since in sick children acupuncture was carried out in combination with Emu Oil ointment, a control group of 10 patients with atopic dermatitis, who underwent the same treatment, but without the use of acupuncture, was subjected to an immunological examination.

If we evaluate the results of the use of acupuncture in general, we can conclude that it turned out to be quite effective in the near future. The majority of 28 (87.5%) patients experienced clinical remission, a significant improvement and improvement in their condition. When observed over a longer period of time (from 6 months to 1 year), 22 (68.7%) patients had longer periods of remission than before, exacerbations were of a milder and shorter duration.

After completion of acupuncture, upon reaching a positive effect, a second study of the studied immunological parameters was carried out. The level of serum immunoglobulins of classes A, M remained, as before treatment, within normal fluctuations. In patients with elevated initial IgG levels, there was a tendency to normalize this indicator. Another pattern was observed in the dynamics of the IgE level. In 12 patients, immediately after the 1st course of acupuncture, a statistically significant ($P < 0.001$) increase in its level was noted. Before the start of the 2nd course of acupuncture, the IgE level in most patients was lower than the initial level, and at the end of the course it slightly increased again. The same pattern, but more pronounced, was observed in patients by the time of the 3rd course of RT ($P < 0.001$).

Thus, after the application of the method of acupuncture during remission in patients with neurodermitis, the content of IgE in the blood tended to decrease compared to its initial values. However, normalization of the IgE level was not observed in any case.

The smallest clinical effect of acupuncture was observed in the group of patients with a severe course of the disease and a slightly changed initial level of IgE.

Improvement in their condition occurred only after repeated courses of treatment. Apparently, the high level of total IgE before the start of treatment and after the 1st course of acupuncture, the prognosis was more favorable than its slightly changed indicators.

As a result of conventional treatment without the use of acupuncture, sick children in the control group, along with a slight improvement in the state of the skin process, there was a tendency to a slight decrease in the level of IgE in the blood.

Discussion of the results obtained: The research results allow us to conclude that acupuncture has a normalizing effect on the parameters of the humoral link of the immune system in patients with neurodermitis. The question arises about the possible mechanisms of such action of acupuncture. In addition to the known general effects of acupuncture on the human body in the form of stimulation of the function of the adrenal cortex, the central nervous system, a decrease in the level of certain biologically active substances, the possibility of a direct effect of acupuncture on some lymphoid organs through the acupuncture points responsible for them is not excluded. The complex of acupuncture points used in this work included points responsible for the spleen (RP-1, RP-4, RP-6, RP-10), small intestine (IG-3, IG-4, IG-8), point of the front median meridian (I-22), responsible for the thymus. The assumption of such a possible mechanism of the impact of acupuncture on the immune system was also expressed by other authors. This issue can be finally resolved only with further research and observation.

Findings:

1. In the pathogenesis of sick children with neurodermitis, there is a change in the

functional activity of the humoral link of immunity, expressed in an increase in the level of serum IgE.

2. Acupuncture, being an effective method of treating patients with neurodermitis, has a normalizing effect on some altered indicators of the humoral immunity in children with neurodermitis.

LIST OF REFERENCES:

- [1] Aimaganbetov Zh.M., Beisenbayeva U.T. Modern aspects of the pathogenesis of neurodermitis (review). *News of dermatology and venereology* 2016:20–6.
- [2] Gasich N.A., Prokhorenkov V.I. Features of the immune status and optimization of therapy neurodermitis. *Modern problems of neurodermatitis Scientific and practical conference - Novosibirsk* 2010:96.
- [3] Gorlanov I.A., Milyavskaya I.R. Features of HLA - systems in neurodermitis and its relationship with clinical characteristics, indicators of endocrine and immune status in children. *Allergology* 2015:17–21.
- [4] Yesengaraeva Z.B. and Saylaulov K.S. The use of Advantana ointment in the treatment of atopic dermatitis. //Methodological guide for practitioners Kazakhstan 2013.
- [5] Kartunina O.R. Immunomorphological characteristics of inflammatory infiltrate cells in psoriasis. *Bulletin of dermatology and venereology* 2018:25–31.
- [6] Kungurov N.V. Immunological aspects of neurodermitis. *Immunological aspects of neurodermitis* 2018:14–7.
- [7] Latiy O.V., Belousova I.E., Samtsov A.V. Immunological features of the use of Skin-cap in comparison with external steroids in patients with atopic dermatitis. *Bulletin of dermatology and venereology* 2015:46–51.
- [8] Matushevskaya E.V. The effectiveness of pimecrolimus in the treatment of atopic dermatitis based on the study of the cellular link of immunity. *Bulletin of dermatology and venereology* 2010:36–41.
- [9] Matushevskaya E.V., Bogush P.G., Popova I.S. et al. Analysis of allergospecific IgE in patients with neurodermitis. *Bulletin of dermatology and venereology* 2019:4–6.
- [10] Sergeev IV, Zimin II, Reznikov IP, Malyshev VS, Pimenova NS. [Atopic dermatitis. I. Characteristics of the clinical course and state of the immune status in relation to the initial level of serum IgE]. *Vestn Dermatol Venerol* 1989:8–12.
- [11] Suvorova K.N. Neurodermitis: immunopathogenesis and immunotherapy strategy. *Russian medical journal* 2000;6:363–7.