



УДК 616-06

DOI 10.53065/kaznmu.2022.47.21.011

Арай Батырбаева*Acting Head of the Republican Allergological Center, JSC Scientific Research Institute of Cardiology and Internal Diseases, Almaty, Kazakhstan*E-mail: aikoshny@mail.ru ;

ORCID ID: 0000-0001-9987-4741

CLINICAL CASE: COURSE OF ATOPIC DERMATITIS IN A PATIENT AFTER COVID-19

Resume. The article describes atopic dermatitis (AD) and presents a clinical case of the course and observation of atopic dermatitis in a patient after suffering a coronavirus infection COVID-19 for 6 months. The work studied a patient who went to an outpatient appointment with an allergist at the Republican Allergological Center (RAC) on September 17, 2021, with complaints of rashes on the body, accompanied by itching, peeling, and excessive dryness of the skin. The diagnosis of AD was made on the basis of clinical protocols of the Ministry of Health of the Republic of Kazakhstan. At the end of the article, conclusions are drawn for the treatment of a patient who has suffered a coronavirus infection COVID-19.

Key words: atopic dermatitis (AD), a coronavirus infection COVID-19, clinical protocol, treatment

Арай Батырбаева*«Кардиология және ішкі аурулар ғылыми-зерттеу институты» АҚ Республикалық алергологиялық орталық басшысының м.а., Алматы қ, Қазақстан*E-mail: aikoshny@mail.ru ;

ORCID ID: 0000-0001-9987-4741

КЛИНИКАЛЫҚ ЖАҒДАЙ: КОВИД-19 ЖҰҚТЫРҒАН ПАЦИЕНТТІҢ АТОПИЯЛЫҚ ДЕРМАТИТПЕН АУРУЫНЫҢ БАРЫСЫ

Түйін. Мақалада атопиялық дерматит (АД) сипатталған және 6 ай бойына COVID-19 коронавирустық инфекциясымен ауырған науқас бойындағы атопиялық дерматиттің ағымы мен байқалуының клиникалық жағдайы берілген. Жұмыста 2021 жылдың 17 қыркүйегінде Республикалық алергологиялық орталыққа (РАО) алерголог дәрігердің амбулаториялық қабылдауына денесінде қышу, пиллинг, терісінің шамадан тыс құрғауы байқалған бөртпеге шағымданған науқас зерттелді. АД диагнозы Қазақстан Республикасы Денсаулық сақтау министрлігінің клиникалық хаттамалары негізінде қойылды. Мақаланың соңында COVID-19 коронавирустық инфекциясын жұқтырған науқасты емдеу туралы қорытындылар жасалады.

Түйін сөздер: атопиялық дерматит (АД), коронавирустық инфекция COVID-19, клиникалық хаттама, емдеу

Арай Батырбаева*И.о. руководителя Республиканского алергологического центра АО «НИИ кардиологии и внутренних болезней», Алматы, Казахстан*Email: aikoshny@mail.ru ;

ORCID ID: 0000-0001-9987-4741

КЛИНИЧЕСКИЙ СЛУЧАЙ: ТЕЧЕНИЕ АТОПИЧЕСКОГО ДЕРМАТИТА У ПАЦИЕНТА ПОСЛЕ

Резюме. В статье описан атопический дерматит (АД) и представлен клинический случай течения и наблюдения атопического дерматита у больного после перенесенной коронавирусной инфекции COVID-19 в течение 6 месяцев. В работе исследована больная, обратившаяся на амбулаторный прием к врачу-аллергологу в Республиканский алергологический центр (РАЦ) 17 сентября 2021 г. с жалобами на высыпания на теле, сопровождающиеся зудом, шелушением, чрезмерной сухостью кожи. Диагноз БА ставили на основании клинических протоколов МЗ РК. В конце статьи сделаны выводы по лечению пациента, перенесшего коронавирусную инфекцию COVID-19.

Ключевые слова: атопический дерматит (АД), коронавирусная инфекция COVID-19, клинический протокол, лечение.

INTRODUCTION. Atopic dermatitis (AD) is a common and chronic inflammatory skin disease. It mainly manifests

itself in childhood. The condition has a recurrent course. The inflicted individual has a family history of various



allergic diseases, allergic rhinitis, bronchial asthma, and often there is an increase in the level of IgE in the blood serum. In recent years there has been an increasing number of cases when the disease persists or occurs for the first time in adults. In this regard, relatively recently, M. Bannister and S. Freeman (2000) introduced the term "atopic dermatitis of adults" (adult-onset atopic dermatitis) [1].

AD, as a rule, in adults proceed in waves, with periods of exacerbations and remissions, often has a moderate and severe course. Relapses of the disease are associated with the impact of various provoking factors, which in adult patients with AD include specific (causally significant allergens) and non-specific triggers [mechanical, physical, chemical stimuli, biological (infectious) agents, environmental factors (volatile organic substances, tobacco smoke, and others)] [2].

The consequences of the COVID-19 coronavirus infection for different categories of patients are not fully understood and are under continuous investigation and search for new data. The first cases of CORONAVIRUS infection COVID-19 were reported in Kazakhstan on March 13, 2020. On July 5, 2020, a regime of strict isolation began to operate in Kazakhstan. All facilities closed, except for grocery stores, pharmacies, cafes (with social distancing), airports (domestic flights) [3].

This article presents a clinical case of the course and observation of atopic dermatitis in a patient after suffering coronavirus infection COVID-19 for six months.

MATERIAL AND METHODS. The work examined a patient who turned to an outpatient appointment with an allergist at the Republican Allergological Center (RAC) on 17.09.2020 with complaints of rashes on the body, accompanied by itching, peeling and excessive dryness of the skin. The diagnosis of AD was made based on clinical criteria of the Moscow State Hospital of the Republic of Kazakhstan [4].

The SCORAD scale determined the prevalence, nature, and severity of symptoms of AD. The prevalence (area) of the lesion was determined by using the rules of "nines". Foci taken into account had the character of inflammatory lesions. Intensity (severity) of symptoms: each of the six signs (erythema, oedema/formation of papules, weakening/crusts, excoriation, lichenification, dryness) was evaluated on a scale from 0 to 3 points: 0 - absence, 1 - mild, 2 - moderately severe, 3 - severe severity. Dryness was assessed on non-inflamed skin. Subjective symptoms: A similar scale (0-10) of assessing the following symptoms: itching, loss of sleep, general skin condition. The SCORAD index was calculated using the following formula: $SCORAD = A/5 + 7*B/2 + C$, where

A - the area of the affected skin, in %;

B - the sum of points of objective signs (erythema, oedema, weeding, excoriation, lichenification, dryness);

C - the sum of the points of subjective signs (itching, loss of sleep).

Allergological methods. Allergological history, the results of identifying allergens - specific IgE in the blood serum with the help of enzyme immunoassay diagnostic kits of the company "Alisei" were taken into account. Fifty-five allergens of various groups (food, respiratory) were determined.

At the initial clinical evaluation, there were complaints of rashes on the body, accompanied by itching, peeling and excessive dryness of the skin.

Upon collecting the patient's medical and health history, the above complaints bothered the patient for about a month. Previously, according to the patient, he suffered from atopic dermatitis until three years of age, following complete remission. This relapse was associated with COVID-19 infection in July 2020. The patient began to worry about the increase in body temperature, loss of smell, muscle pain, weakness. He was diagnosed with a COVID-19 infection at his place of residence and treated on an outpatient basis. The period of convalescence lasted up to three weeks. In August, rashes on the face accompanied by itching and dryness of the skin began to bother. Then the rash began to spread along the back and front of the neck, along the back. In connection with the increase in itching and peeling of the skin, he visited the polyclinic at the place of residence and was sent for a consultation with an allergist. Also, the patient was previously observed by an allergist for persistent allergic rhinitis for over ten years. The season of exacerbation is the summer-autumn period. In the winter of 2010, a Specific Immunodiagnosics (LED) was carried out based on the RAC, where sensitization to types of weeds was detected. That year the patient underwent a course of Allergen-specific immunotherapy (ASIT). However, in the future, the COURSE OF ASIT did not continue.

From the medical history: Botkin's disease, Tuberculosis was denied, as were any chronic co-morbidities. The patient denied any bad habits and occupational hazards. Objectively, during the initial examination, the condition was of moderate severity due to the skin cycle. The skin cycle is represented by diffuse erythematous papular rashes, without weakening, on the face, neck, trunk, and on the elbow bends flexor surfaces; in some places, there are excoriations, areas of peeling of the skin. (**Figure 1**) Peripheral lymph nodes are not enlarged. From the lungs and heart, gastrointestinal tract - without pathology. Stool and diuresis are normal.



Figure 1 - Facial skin lesions during primary treatment

A laboratory workup was performed. According to the general blood test from 13.09.2020, eosinophilia was up to 12.24% (absolute amount $0.87 \cdot 10^9 / l$). According to the biochemical analysis of blood - without deviations. ELISA for total immunoglobulin E in the blood from 13.09.2020 896IE / ml, in dynamics the indicator increased to 1156II / ml. Specific allergy diagnostics on the Alisei ELISA analyzer was carried out on food and respiratory allergens. As a result, sensitization was detected on chocolate (1.75), honey (2.3) and household allergens: on D/pteronysinus 1.24++, D/farinae 0.47+ RESULTS AND DISCUSSION. Considering the anamnesis, the clinical and laboratory findings, the patient was

diagnosed with atopic dermatitis, an adult form, ordinary, a moderate degree in the acute stage. The SCORAD index was calculated (Table 1). The SCORAD index before the start of therapy was (39.8) points, the affected area - (37.2)%. Rashes were accompanied by itching of varying intensity and sleep disturbance [(6) and (5) points on a 10-point scale, respectively. By the end of the 2nd week of treatment, the affected area decreased to (12.2)%; the itching was insignificant. Scores of the intensity of itching and sleep disturbance were 2.3. As a result of the treatment, a significant improvement of the condition was achieved.

Table 1 - Dynamics of SCORAD index criteria during treatment and before treatment.

Criterion	Before treatment	starting	In the second week	In the fourth week	In the eighth week
Index SCORAD, scores	39,8		13,9	4,6	5,2
Prevalence of the skin process	37,2		12,2	6,3	6,5
Intensity of itching, scores	6,0		2,3	0,6	0,6
Sleep disturbance, scores	5,0		1,8	0,5	0,4

After the second week, the fourth week and the eighth week SCORAD index, scores 39.8, 13.9, 4.6, and 5.2, respectively. Prevalence of the skin process, 37.2 %, 12.2 %, 6.3 %, 6.5 %, respectively. Intensity of itching, scores 6.0 2.3 0.6 0.6 Sleep disturbance, scores 5.0 1.8 0.5 0.4. However, two weeks after stopping treatment, skin symptoms resumed. The course of treatment with TGKS, antihistamines, emollients had to be repeated, which indicated a chronic course of the disease, which the patient had not previously experienced.

CONCLUSION. The course of atopic dermatitis in this patient after coronavirus infection was more severe and persistent than the standard course of the disease. Mass treatment of premises with the use of disinfectants, frequent treatment of the skin with antiseptics may have been worsening factors during the course of the disease. Treatment of coronavirus infection COVID-19 with antibiotics may have been the cause of intestinal dysbiosis and the cause of persistent exacerbation of AtD in this patient.

СПИСОК ЛИТЕРАТУРЫ

1 Bannister M., Freeman S. Adult-onset atopic dermatitis. *Australas J Dermatol.* 2000 Nov;41(4):225-8. doi: 10.1046/j.1440-0960.2000.00442.x.

2 Allergology. Federal Clinical Recommendations. Ed. by R.M. Khaitov, N.M. Ilyina. Moscow: Farmarus Print Media, 2014. 126 p.

3 Coronavirus Disease 2019 (COVID-19) at JAMA

4 https://diseases.medelement.com/disease_/atopic-dermatitis-2019/16385

5 Khaitova R.M., Ilyna N.I., Allergology and immunology. National leadership. Moscow: GEOTAR-Media, 2009. 656 p.

6 Filimonova, T.M., Elisyutina, O.G., Shtyrbul, O.V., et al. Atopic dermatitis: a modern view on the problem.[In Russian]. *Effective pharmacotherapy.* 2012. № 7. pp. 36–40.

7 Akdis, C.A., Akdis, M., Bieber T., et al., Diagnosis and treatment of atopic dermatitis in children and adults: European Academy of Allergology and Clinical Immunology, American Academy of Allergy, Asthma and



Immunology. PRACTALL Consensus Report. Allergy. 2006. Vol. 61. P.969—987. DOI: [10.1016/j.jaci.2006.03.045](https://doi.org/10.1016/j.jaci.2006.03.045)

8 Kim, J.P., Chao, L.X., Simpson, E.L., [et al.] Persistence of atopic dermatitis (AD): A systematic review and meta-analysis. *J. Am. Acad. Dermatol.* 2016. Vol. 75, № 4. P. 681–687. doi: 10.1016/j.jaad.2016.05.028.

9 Lebowitz, M., Herrmann, L., G., Impaired of skin barrier function in dermatologic disease and repair with moisturization. *Cutis.* 2005. Vol. 76.P. 7-12. <https://pubmed.ncbi.nlm.nih.gov/16869176/>.

10 Nenasheva, N.M. Modern therapy of atopic dermatitis: the role of emollients and antihistamines.[In Russian]. *Effective pharmacotherapy.* 2016. № 6. P.6-14. https://umedp.ru/articles/sovremennaya_terapiya_atopi

[cheskogo dermatita rol emolentov i antigistaminnykh p reparatov.html](https://doi.org/10.1016/j.jaci.2006.03.045).

11 Yaghmaie P., Koudelka CW, Simpson EL Сопутствующая психическая патология у больных атопическим дерматитом. *Ж Аллергия Клиническая Иммунология.* 2013; 131 : 428–433.

12 Богуневич М., Леунг Д.Ю. Атопический дерматит: болезнь измененного кожного барьера и иммунной дисрегуляции. *Иммунология.* 2011; 242 : 233–246.

13 Леунг Д.Ю. Новые взгляды на атопический дерматит: роль кожного барьера и нарушение регуляции иммунной системы. *Аллергология и Иммунология.* 2013; 62 : 151–161.

REFERENCES

1 Bannister M., Freeman S. Adult-onset atopic dermatitis. *Australas J Dermatol.* 2000 Nov;41(4):225-8. doi: 10.1046/j.1440-0960.2000.00442.x.

2 Allergology. Federal Clinical Recommendations. Ed. by R.M. Khaitov, N.M. Ilyina. Moscow: Farmarus Print Media, 2014. 126 p.

3 Coronavirus Disease 2019 (COVID-19) at JAMA

4 <https://diseases.medelement.com/disease/atopic-dermatitis-2019/16385>

5 Khaitova R.M., Ilyina N.I., Allergology and immunology. National leadership. Moscow: GEOTAR-Media, 2009. 656 p.

6 Filimonova, T.M., Elisyutina, O.G., Shtyrbul, O.V., et al. Atopic dermatitis: a modern view on the problem.[In Russian]. *Effective pharmacotherapy.* 2012. № 7. pp. 36–40.

7 Akdis, S.A., Akdis, M., Bieber T., et al., Diagnosis and treatment of atopic dermatitis in children and adults: European Academy of Allergology and Clinical Immunology, American Academy of Allergy, Asthma and Immunology. PRACTALL Consensus Report. Allergy. 2006. Vol. 61. P.969—987. DOI: 10.1016/j.jaci.2006.03.045

8 Kim, J.P., Chao, L.X., Simpson, E.L., [et al.] Persistence of atopic dermatitis (AD): A systematic review and meta-

analysis. *J. Am. Acad. Dermatol.* 2016. Vol. 75, № 4. P. 681–687. doi: 10.1016/j.jaad.2016.05.028.

9 Lebowitz, M., Herrmann, L., G., Impaired of skin barrier function in dermatologic disease and repair with moisturization. *Cutis.* 2005. Vol. 76.P. 7-12. <https://pubmed.ncbi.nlm.nih.gov/16869176/>.

10 Nenasheva, N.M. Modern therapy of atopic dermatitis: the role of emollients and antihistamines.[In Russian]. *Effective pharmacotherapy.* 2016. № 6. P.6-14. https://umedp.ru/articles/sovremennaya_terapiya_atopi_cheskogo_dermatita_rol_emolentov_i_antigistaminnykh_p_reparatov.html.

11 Yaghmaie P., Koudelka CW, Simpson EL Сопутствующая психическая патология у больных атопическим дерматитом. *Ж Аллергия Клиническая Иммунология.* 2013; 131 : 428–433.

12 Богуневич М., Леунг Д.Ю. Атопический дерматит: болезнь измененного кожного барьера и иммунной дисрегуляции. *Иммунология.* 2011; 242 : 233–246.

13 Леунг Д.Ю. Новые взгляды на атопический дерматит: роль кожного барьера и нарушение регуляции иммунной системы. *Аллергология и Иммунология.* 2013; 62 : 151–161.

Сведения об авторе

Арай Батырбаева

Email: aikoshny@mail.ru;

ORCID ID: 0000-0001-9987-4741

И.о. руководителя Республиканского аллергологического центра АО «НИИ кардиологии и внутренних болезней», Алматы, Казахстан