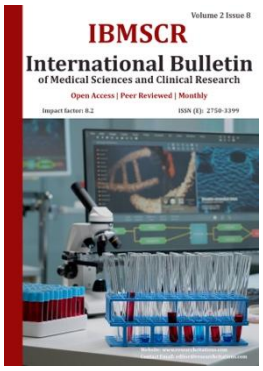

SPREAD OF ALLERGIC DISEASES AMONG CHILDREN IN ANDIJAN REGION

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Annotation. The article studied the features of the prevalence of allergic diseases (AD) in children, taking into account the geo-ecological state of the natural environment of the regions of Andijan region. The ranking of the territories of the region according to the incidence of AD was carried out. High morbidity within the region at the same time as BA, AR and AtD is noted in the Asaka district.

Key words: allergic diseases, environmental factors, children.

Over the past decades, in most countries of the world there has been an increase in the prevalence of allergic diseases (AD) among children. According to experts from the International Study of Asthma and Allergy in Childhood (ISAAC), local environmental conditions play a crucial role in global variability in the prevalence of allergy symptoms [1].

Among environmental factors, chemical pollutants occupy an important place [2,3,9]. The pathogenetic role of environmental pollution in the development of diseases can manifest itself in the form of various effects: a change in the structure of morbidity, a protracted, chronic and atypical course of the disease [1,4], suppression of the body's immunological reactivity [5].Proving the importance of environmental factors in the development of the disease is a difficult and not always feasible task, therefore, studies on the assessment of the role of environmental factors in the development of AD are characterized by inconsistent results. There is ample evidence of direct links between environmental pollution and the incidence of allergies [7, 9].

The results of some studies indicate a significant prevalence of AD in children living in areas with high air pollution [6, 8]. At the same time, other studies did not reveal the negative impact of environmental factors: in areas that differ in the level of atmospheric pollution, there were no significant differences in the incidence of allergies in children. Thus, the issue of the impact of environmental pollution on the prevalence of AD requires further study, and an assessment of the prevalence of AD in connection with adverse environmental factors in order to make the right decision on the provision of medical and preventive care to the population in each region is necessary.

Andijan region is one of the regions of the Republic of Uzbekistan. with developed industry and agriculture. The occupied area is 4,240 km^2 (13th place among the regions of Uzbekistan), 3,127,683 thousand people live, the population density is 240.2 people. per 1 km2 (9 times higher than the republican one). In the structure of the republic, it is the smallest in terms of area and population, but one of the most densely populated regions. Urban (73.6%) population prevails in the structure of the population. The climate is continental, the climatic conditions are generally comfortable in the region [1] and not very comfortable with a reduced climatic potential for self-purification of the atmosphere in Andijan [1].

The chemical industry is dominant, among other significant industries - food, engineering, metalworking, production of building materials. The main production facilities are located in Andijan and Asaka.

The degree of anthropogenic load (AN), which characterizes the impact of human economic activity on the ecosystem, in Andijan region is 4.22 points and is characterized as high. In accordance with the scale for assessing the geoecological state of the natural environment [1], 5.6% of the total area of the region has a favorable state of the natural environment, 50.2% - relatively favorable, 27.1% - relatively unfavorable, 17.1% - unfavorable. AZ in relation to the state of the environment are among the indicators of public health recommended by the WHO Regional Office for Europe as part of the Health for All strategy. In the period 2017-2021 in the Andijan region, there is a steady upward trend in the overall incidence of BA, AR and AD. An analysis of the relationship between the prevalence of AD among the child population and environmental factors in the Andijan region was not carried out, which determined the relevance of this study.

The purpose of the study was to study the prevalence of AD in children, taking into account the geoecological state of the natural environment in the regions of Andijan region.

Materials and methods. Sources of data on the use of natural resources in the Andijan region: "Andijan Region Statistical Yearbook 2022," "Andijan Region Statistical Yearbook 2023," "Andijan Region Statistical Yearbook 2024," Official website of the Department of Statistics of the Andijan region, "Environmental Bulletin for 2021," "Environmental Bulletin for 2024."

Verification of the normal distribution of quantitative indicators was carried out using the Kolmogorov-Smirnov criterion.

Statistical processing of the obtained data was carried out using Statistica for Windows v. 6.0, StatSoft Inc. (USA).

Results and discussion. The component analysis, carried out to identify the main factors influencing the natural resources of the region's environment, made it possible to identify 2 components that explain 81.45% of the accumulated variance. The first principal component explains 65.07% of the accumulated variance. Closely related to it (the correlation coefficient is more than 0.8) is the volume of water used for household and drinking needs (+0.97), water intake from natural sources (+0.82), water intake from underground sources (+0.99), the total volume of water used (+0.95), the discharge of wastewater into surface water bodies (+0.79), the discharge of standard treated water (+0.95), the total volume of wastewater discharged (+0.93).The second main component explains 17.83% of the accumulated dispersion, it is closely related to the use of water for production needs (+0.87), the use of standard purified water (+0.91).

Component analysis, carried out to identify the main factors that determine the emissions of pollutants into the atmospheric air, made it possible to identify 3 components that explain 90.74% of the accumulated dispersion. The first principal component explains 63.08% of the accumulated dispersion, is closely related to emissions of gaseous and liquid pollutants (+0.97), carbon monoxide (-0.82), carbon monoxide (+0.85), nitrogen dioxide (+0 .92), non-methane volatile compounds (+0.93), emissions from mobile (-0.93) and stationary sources (+0.97) pollution. The second main component explains 17.09% of the accumulated dispersion, pollutants (+0.88) and emissions of solid pollutants (-0.89) are closely related to it, captured

and neutralized. The third principal component accounts for 11.44% of the accumulated variance and is closely related to sulfur dioxide emissions (-0.94).

An analysis of the regional characteristics of AZ in children in the analyzed period showed that the first ranking places (high incidence) in general for AZ (BA, AR, AtD) are occupied by Asaka, Pakhtabad and Izbasken districts. A high incidence of BA, AR and AtD at the same time in the region is noted in Asaka district, AtD - in Pakhtabad district, AR - in Andijan (+ Andijan city), BA - in Izbasken district. Territories of Asaka, Andijan (+ Mt.Andijan), Pakhtabad districts are the most urbanized, the main industrial enterprises of the region are located here, there is a very high AN on the ground. The last ranking places (low incidence) are occupied by Kurgantyupinsky, Zhalakuduksky and Bulakbashi districts, their territories are characterized by a relatively favorable geoecological state of the natural environment, low AN.

In order to clarify the role of unfavorable environmental factors present in the region in the development of AD, we conducted a comparative analysis of the average long-term incidence rate of BA, AR, and AD in the period 2017-2021. in 4 territories, differing in the geo-ecological state of the natural environment. As can be seen from the presented table, there were no differences in the incidence rate of BA in the analyzed territories. The incidence rate of AR and AD increased as the degree of ecological trouble increased and was the highest in areas with an unfavorable geo-ecological state of the natural environment. In the structure of the AZ in areas with a favorable geo-ecological state of the natural environment, the first ranking place is occupied by BA, the second - by AtD. In the structure of the AZ in areas with an unfavorable geo-ecological state of the natural environment, the first ranking place is occupied by AtD, the second - by BA, which is consistent with the literature data [8].

Based on the results of the study, it can be concluded that the spatial variation in the incidence rate of BA, AR and AtD in the child population aged 0-14 years is interconnected with the ecological and hygienic state of the environment in the Andijan region. According to the results of the component analysis, the leading factors affecting the risk of their development are pollution of water resources and air by liquid and gaseous pollutants.In accordance with the latest results of a study by scientists, a change in the structure of AZ towards the predominance of the frequency of skin allergies, an increase in the prevalence of chronic AZ of the respiratory tract is the result of a violation of the barrier properties of these systems due to the pathogenetic impact of adverse environmental factors [7]. The results of studies on the prevalence of AD in areas with different geoecological conditions of the natural environment can be useful in developing action plans for the prevention, treatment and rehabilitation of the child population with this pathology. Therapeutic and preventive measures should be carried out taking into account the regional features of the geo-ecological state of the natural environment.

The implementation of such measures should be carried out in several directions: long-term monitoring of the health status of the child population, correction of identified violations, environmental protection measures, informing medical workers about the degree of environmental pollution, the consequences of technogenic impacts and possible preventive measures to prevent them.

Conclusion. The territories of the region were ranked according to the level of morbidity with AD. High morbidity within the region at the same time as BA, AR and AtD is noted in the Asaka district

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