

**DEPENDENCE OF THE PREVALENCE OF ALLERGIC DISEASES ON
ENVIRONMENTAL POLLUTION**

M.M. Madumarova

Senior Lecturer

Andijan State Medical Institute

N.I. Alimov

5th year student

Andijan State Medical Institute

Annotation: The environment has an aggressive influence and leads to a steady increase in the spread of allergic pathology. Epidemiological and basic research provide evidence that allergic processes are rare. There is an increase in pseudo-allergy. A concept of the cause of prevalence, etiology, and pathogenesis of pseudo-allergies is proposed.

Keywords: Allergy, pseudo-allergy, prevalence, concept of pseudo-allergies, urticaria, anaphylactoid shock, bronchial asthma.

RELEVANCE OF THE TOPIC

Allergic diseases are a pressing problem of the third millennium in terms of their social, medical and economic significance. The reason for this is anthropogenic pollution of the environment and the rapid degradation of all its components - the atmosphere, hydrosphere, soil, fauna and flora. It is currently believed that, on average, about 10% of the world's population suffers from allergies. Every 20-30 years, allergic diseases in the world increase by 2-3 times. Environmental factors are of great importance in the development of allergies.

PURPOSE OF THE STUDY

To actively and successfully combat many allergic diseases, it is necessary to study the relationship between the prevalence of allergic diseases and environmental factors.

MATERIALS AND METHODS OF RESEARCH

Epidemiological studies to study the prevalence of allergic diseases were carried out among residents of Andijan, Asaka, Markhamat district, and Khanabad. A total of 1,768 people were covered. In the study areas, according to the hydrometeorological service, the ecological state of the environment was analyzed. The subjects lived in areas with varying degrees of anthropogenic pollution. In one microdistrict of Andijan, sulfur dioxide and nitrogen dioxide in the atmosphere were many tens of times higher than the maximum permissible concentrations in the atmosphere, in another, their level was half as much in the atmosphere, but high levels of dust pollution were noted.

RESULTS OBTAINED

Anthropogenic pollutants are chemical industrial substances that have toxic properties, especially when they exceed the MPC by 30-70 times in the atmosphere. While the development of allergies - hypersensitivity to any substances (allergens) is caused by negligibly small levels, they are indifferent for a healthy person. Toxic doses of substances cause another pathological condition, poisoning, acute or chronic. This knowledge forced us to pose a number of questions. Are these allergic diseases? Or is it some other pathology, a group of acute and chronic toxic diseases caused by the environment? To do this, we need to study how industrial toxicants and medicinal substances (xenobiotics) affect the universal mechanisms of biotransformation of the human liver? It is necessary to clarify whether xenobiotics are capable of reproducing allergic reactions in individuals with identified allergy symptoms through modern methods (questioning, skin testing, and most importantly, provocative, highly reliable diagnostic tests) of allergological examination during epidemiological studies. Since the barrier organ between the environment and the internal environment of the body is the liver, at the third stage its universal biotransformation and other functions of the liver were studied in a hospital or sanatorium. The state of liver function was performed by assessing clinical and biochemical liver syndromes: cytolytic, holistic, hepatodepressive and mesenchymal-inflammatory.

At the second and third stages, only persons who had symptoms and signs of allergic diseases (bronchial asthma, hay fever, rhinosinusopathy, urticaria, neurodermatitis, anaphylactic shock and others) were included in the study groups.

It is well known that all the symptoms and signs observed in the clinic of a particular process, including an allergic one (choking, shock, blister, sneezing, rhinorrhea, itching, etc.) are not specific. All of them are nonspecific, as they can be observed in many diseases associated with different systems and organs. Consequently, a non- and itchy blister, loss of consciousness, an attack of suffocation are not a 100% guarantee of an allergy, i.e. so-called "allergic" urticaria, anaphylactic shock, bronchial asthma, etc.

The causes and mechanisms of development of pseudo-allergies have so far remained unclear; it is known that an increased content of biologically active substances (histamine, leukotrienes, etc.) is constantly recorded in their blood.

Thus, at the beginning of the allergic process, immune mechanisms (sensitization) are triggered, but with pseudo-allergy there are none. While stage II – pathological stage – release of biologically active substances is observed in both pathological conditions and therefore has a similar (pathophysiological stage) clinic. Although the mechanisms for increasing the content of biologically active substances and their structure are different, the result is the same - high levels of these substances in the blood. Diagnosis of pseudo-allergies in clinics to this day is carried out by excluding the allergic process. An attempt to develop a diagnosis of pseudo-allergy in clinics has so far been unsuccessful. So, the similarity of these two processes will be the same clinical symptoms: blister, dermatitis, suffocation, shock, etc.

Questions arise. How common are allergic and pseudoallergic processes? Which of these two processes depend on anthropogenic environmental pollution?

To clarify the questions posed, the emerging pathological processes in bronchial asthma, urticaria and shock were studied. Bronchial asthma has become the disease of the century in terms of its socio-economic significance. Urticaria is the most common process and, according to previous studies, prevails among other allergic diseases, accounting for more than 50% of their structure. It is believed that each of the three inhabitants of the planet suffered from urticaria at least once in their life. Whereas, anaphylactic shock is the most rare disease. A 20-year retrospective study conducted in Denmark found the prevalence of anaphylactic shock to be 3.2 per 100,000 population.

Epidemiological studies have revealed that the prevalence of all clinical and pathogenetic forms of bronchial asthma in the city of Andijan, in the 4th microdistrict, is 33.5 per 1000 population, while in the city of Khanabad it is only 17.6, respectively. The highest prevalence was in microdistrict 4, where the maximum anthropogenic pollution of the soil and moderate pollution of the atmosphere was noted.

The prevalence of the allergic form, atopic bronchial asthma, was 7.7 and 4.6 per 1000 population, respectively, in these territories, while the pseudoallergic form, aspirin asthma, was 19.3 and 7.6, respectively. No significant differences were noted between allergic variants of bronchial asthma, while the prevalence of the pseudoallergic form was statistically significantly higher in the 4th microdistrict in relation to the city of Khanabad. The infectious variant was also more common in the 4th microdistrict (6.1 per 1000 population) compared to the city of Khanabad (3.0, respectively).

The prevalence of another, but more rarely observed pathological condition of allergic shock (anaphylactic shock) and pseudoallergic (anaphylactoid) shock in the Andijan region was: allergic 0.09 per 1000 population, and pseudoallergic shock - 1.2 per 1000. At the same time, anaphylactic shock was detected only in the 2nd and 3rd microdistricts of Andijan and its prevalence was 0.68 per 1000. In another 4th microdistrict (the most environmentally unfavorable) not a single case of anaphylactic shock was identified during an epidemiological survey, as in the city of Khanabad. All patients who experienced anaphylactic shock were collected from medical institutions in Andijan. In total, five patients were found in Andijan, taking into account those identified in microdistricts 2 and 3. One patient experienced anaphylactic shock four times during his life.

The prevalence of pseudoallergic - anaphylactoid shock was significantly higher than anaphylactic shock. Thus, the prevalence of anaphylactoid shock was noted in the city of Andijan, 4th microdistrict with a frequency of 6.3 per 1000 population, 3rd microdistrict - 2.54, 2nd microdistrict - 0.86, respectively. As we see in the city of Andijan, in the 4th microdistrict, the prevalence of anaphylactoid shock is almost an order of magnitude higher in relation to the 2nd microdistrict and even higher - 2.5 times in comparison with the 4th microdistrict, which is statistically significant. Overall, anaphylactoid shock was 21.6 times more common than anaphylactic shock. When conducting a correlation analysis, a high direct statistically significant relationship was obtained ($r=0.71$; $p<0.05$) between the levels of the main pollutants in these territories and indicators of anaphylactoid (pseudoallergic) shock.

The same pattern was observed in the prevalence of urticaria, because They were more common in the city than in the village. At the same time, pseudoallergic forms of urticaria

took leading importance. Thus, in the ecologically safe city of Khanabad, the prevalence of urticaria was 28.7 per 1000 population. At the same time, the pseudoallergic form in the structure of all urticaria identified in the city amounted to 91.4%, and allergic forms - only 8.6%. In microdistrict 4, the prevalence of urticaria was 2.5 times higher. However, in the structure of urticaria, its pseudoallergic form occupied the same high proportion. No significant differences were obtained in the proportion of pseudoallergic urticaria detected in the 4th microdistrict and the city of Khanabad. This indicates that urticaria is usually a sign of pseudo-allergy.

So, epidemiological, clinical and allergological studies have made it possible to find out the prevalence of both allergic diseases and pseudo-allergic pathological conditions. And also to establish that pseudoallergic conditions are more common than allergic diseases. In addition, it was found that a direct significant correlation was noted with anthropogenic environmental pollution of pseudo-allergic conditions, and not allergic ones. Allergic conditions are quite rare than pseudo-allergic ones. Moreover, the larger the harmful impact of industrial production on the human environment, the greater the prevalence of pseudo-allergies.

DISCUSSION

Thus, we have received answers to how reliable is the information and knowledge in the medical and journalistic press about the high degree of dependence of truly allergic diseases and their growth on the intensity and duration of exposure to environmentally harmful environmental factors. The epidemiological studies we conducted and the factual material obtained did not confirm the version that allergies will affect humanity.

Pseudo-allergic conditions, that is, pathological processes of a non-immune nature, have a high prevalence and growth. Moreover, they depend on the degree of environmental pollution and the nature of the toxicants. Their greatest prevalence is in areas where degradation of not one, but all components of the biosphere (atmospheric air, soil, groundwater, flora and fauna) has been recorded. These include the 4th microdistrict of the city of Andijan, where contamination of soils was found to be maximum (nickel, cobalt, chromium, lithium, lead, etc.) and 3-4 orders of magnitude permissible concentration for the content of sulfur dioxide and nitrogen dioxide in the air.

CONCLUSION

There are very few truly allergic diseases; their prevalence and growth do not correspond to the forecast proclaimed in the specialized and journalistic literature. A high prevalence and significant increase in pseudo-allergies, which are the essence of manifestations of hereditary liver pathology, has been established. The course and prognosis of which depends on the state of the environment and internal environment of the body, the latter directly depends on the metabolic function of the liver. In order to rehabilitate a patient with this pathology, it is necessary to balance the upcoming chemical-toxic loads with the degree of reduced activity of this enzyme system. It is necessary to eliminate specific medications and nutrients that inhibit monooxygenases from daily use. It is necessary to get rid of bad habits, strengthen the diet with foods that promote self-cleansing of the body. To restore the

ecology of the internal environment, regular weekly use of “non-invasive plasmapheresis” - a sauna or bathhouse - is necessary.

Avoid drug therapy if possible and/or prescribe them carefully, no more than 1-2 drugs and at the same time in a reduced daily dose. Regular hardening water procedures are needed to increase the body's resistance and prevent infectious diseases. Patients should be recommended to undergo annual sanatorium-resort treatment with carbon dioxide mineral waters. It is advisable for this category of patients to live in areas of relative environmental well-being; for this they need to be interested in information about the environmental well-being of their place of residence. They should not associate their work activities with harmful working conditions.

It is advisable for all family members to follow these recommendations, since this trait is inherited in the family in 50% of cases if pseudo-allergies are traced in one of the parents. If both parents have these characteristics in the pedigree, then this trait is inherited by all descendants. If the rules for correcting the patient's lifestyle are followed, this population gets rid of the clinical manifestations of the disease, and their quality of life ceases to differ from that of a healthy person.

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