

INFLUENCE OF ENVIRONMENTAL FACTORS ON THE PREVALENCE OF ALLERGIC DISEASES

Salomova F.I.,

Sherkuziyeva G.F.

Sharipova S.A.

Qobiljonova Sh.R.

Tashkent Medical University

Abstract

The negative processes of the last decades worsening the health of the population of Uzbekistan are of particular concern and increase the incidence of almost all classes of diseases, in all age groups [1,4]. The determining factor in the deterioration of the health of the population is sanitary and epidemiological well-being, which ensures the right of citizens, society and the state to a safe living environment, as well as disease prevention and maintaining a high level of health of the population [6,8]. The health of the population largely depends on unfavorable environmental factors, the complex impact of which determines high rates of morbidity of the population in regions with developed industry and agriculture, and the combination of high anthropogenic load with socio-economic problems increases the threat of the spread of environmentally dependent diseases [5]. Pollution of atmospheric air, drinking water, food, soil have a high impact, a reliable dependence on the level of morbidity in the population of the respiratory system, digestion, cardiovascular system, diseases of the skin and subcutaneous tissue, urolithiasis and cholelithiasis, etc. [7,9]. Heavy metals and pesticides occupy a special place in toxicological assessment affecting the health of the population [2,5]. In recent decades, against the background of environmental pollution with harmful substances, a significant increase in allergic diseases and individual nosological forms has been noted in Uzbekistan with an increase in the severity of the course, an increase in combined forms, both in children and adults, especially in areas with unfavorable environmental conditions [1,3]. These diseases include asthma, rhinitis, eczema, anaphylaxis, food allergies, urticaria, etc., they are considered as systemic disorders of the immune system, which is critical for a significant number of xenobiotics [3,5].

Introduction

In the current socio-economic conditions, despite numerous works devoted to the study of the influence of unfavorable environmental factors on health, many issues of the dependence of the health of the population on the quality of the living environment remain unresolved, especially taking into account the specifics of the regions. The significance of each environmental factor in the development of allergic diseases and, in particular, its nosological forms in the population of different age groups has not been determined, which complicates the implementation of a set of preventive and rehabilitation measures for this group of diseases. At the same time, the incidence of allergic diseases of the population and its individual nosological forms in the Lipetsk region is higher than in Uzbekistan and, in particular, in recent years. All of the above determines the relevance of this work. The studies were conducted within the framework of the industry program "Hygienic justification for minimizing health risks to the population of Uzbekistan" 2011-2015.

The Aim of the Work

To scientifically substantiate the features of the formation of allergic diseases in the population under the influence of unfavorable environmental factors in the agro-industrial region and to develop preventive measures to reduce the risks of disease.

Objectives of the Study

To conduct a multifactorial analysis of the state of the environment of the agro-industrial region, determine the share of environmental factors in morbidity, assess the hygienic situation in the region, rank and map the territories of the region by a comprehensive indicator of anthropogenic load. To study the prevalence of age-related allergic diseases and its individual nosological forms in districts and cities of the region that differ in the level of anthropogenic load on the environment and the results of a questionnaire based on the protocol of the international ISAAC program. To assess the features of the state of non-specific resistance of the skin and mucous membranes in the child population living in conditions of exposure to unfavorable environmental factors using non-invasive bacteriological methods. To identify the relationship between the influence of unfavorable environmental

factors on the formation of allergic morbidity in the population and to give a predictive assessment of allergic morbidity indicators taking into account the change in the influence of unfavorable environmental factors. To substantiate and develop a set of hygienic, medical and organizational measures for the prevention and reduction of allergic diseases and their individual nosological forms in the population of the agro-industrial region and evaluate their effectiveness.

Results of the Study

For the first time at the regional level, the structure, dynamics and patterns of formation of general and newly identified allergic morbidity and its individual nosological forms in age groups of the population of the agro-industrial region from the level of complex anthropogenic load on the environment were determined. Based on the conducted multifactorial analysis, new scientific data were obtained on the change in priority environmental factors affecting the health of the population of the region, the main contribution to the pollution of the environment of cities and agricultural areas is made by the water factor (52.83%), atmospheric air (27.61%) and pesticide load (11.52%). Iron, magnesium, manganese, boron, fluorine and nitrates were determined in concentrations exceeding the MAC. The method of ranking and mapping the territory by the indicator of complex anthropogenic load revealed areas of high and increased risk of pollution. New data were obtained on the features of formation of allergic diseases and its individual nosological forms in the population of the region characterized by: excess of the level of allergic diseases in comparison with the incidence in Uzbekistan; high regional AZ among children and adolescents; annual increase in the growth rate in all age groups of the population; formation of high A3 indicators in cities in comparison with rural areas and the most common nosological forms of allergic diseases - contact dermatitis, bronchial asthma and atopic dermatitis in adults, adolescents and children of the region. A high risk of relationship between the prevalence and newly diagnosed allergic diseases and its individual nosological forms and drinking water quality indicators, pesticide load, food contamination in cities and districts of the region was revealed, as well as a pronounced dependence of the prevalence and newly diagnosed bronchial asthma among the child population (0-14 years) on a comprehensive indicator of anthropogenic load in the region.



The results of the questionnaire survey conducted in accordance with international standards under the ISAAC program in children (6-7 and 13-14 years old) in the cities and districts of the region allowed us to obtain data comparable with the results of similar domestic and foreign studies and indicating the appearance of symptoms that contribute to the early diagnosis of bronchial asthma, allergic rhinitis and atopic dermatitis. Statistically significant symptoms ($P < 0.05$) of difficult wheezing or wheezing breathing in cities in the age group of 13-14 years were revealed.

An unconventional approach to studying the immune status of preschool children, based on the use of non-invasive microbiological methods for examining the skin and mucous membranes, made it possible to assess the adaptive reserves of the child's body at preclinical stages of A3 manifestation, to prove the greatest degree of reduction in non-specific resistance in children of the third health group and in children living in a "conditionally polluted" area, and to show the dependence of changes in bactericidal activity and the composition of the deep microflora of the skin with an increase in anthropogenic load on the environment in cities and districts of the region.

An algorithm of hygienic and medical-organizational measures aimed at preventing and reducing allergic diseases and their individual nosological forms in the population in the cities and districts of the Lipetsk region has been developed and scientifically substantiated, and their effectiveness has been assessed. The conducted multi-year comprehensive studies have made it possible to identify the territories of the region with different levels of environmental distress and socio-economic conditions, assess the risk of allergic diseases and their individual nosological forms in the population in various administrative territories, and outline preventive measures.

The system of prevention of early manifestations of A3 in children of different ages has been scientifically substantiated, including the use of protocols of the international ISAAC program and research on assessment of the immunological status of the child population in cities and districts of the region using a set of methods for studying non-specific resistance using safe, non-invasive methods that allow express screening of large contingents of the population. The data of the standardized epidemiological study on the ISAAC programs made it possible to determine on a scientific basis measures to improve the allergological service and

are an important element in the development of a regional program to combat A3. The results of the study are the basis for the formation of a single database of A3 registration by healthcare institutions and the Mandatory Medical Insurance Fund in urban and rural areas of the region, optimization of the regional system of social and hygienic monitoring for all nosological forms of A3, allowing to assess the risk of diseases, establish cause-and-effect relationships, analyze sanitary and epidemiological situations by territory, with the improvement of the lists of laboratory tests. A study of environmental factors influencing the prevalence of A3, including bronchial asthma, AR and dermatitis, made it possible to identify high-risk groups of morbidity among the region's population, which are taken into account during medical examinations and preventive examinations of the population. Recommendations for minimizing the impact of unfavorable environmental factors on individuals of various age groups have been developed and implemented.

Conclusions

The influence of unfavorable territorial factors of the environment causes an increased risk of allergic diseases in the urban and rural population of the region. Modeling of the real sanitary and hygienic situation is created by ranking and mapping hygienic indicators, the proportional contribution of factors and trends in the development of allergic diseases. Regional features of the formation of allergic diseases of the population and its individual nosological forms are characterized by a high level of prevalence, growth rates, unfavorable prognosis, high risk of interrelation between prevalence and newly identified morbidity with priority hygienic factors of the environment, confirmed by the results of a questionnaire survey and indicators of changes in the immune reactivity of the skin and mucous membranes in children. A set of hygienic and preventive measures, the introduction of regulatory documents and the implementation of management decisions that ensure an improvement in the quality of the living environment and a decrease in allergic diseases in the region

References

1. Choi, J. W., Salomova, F. I., Razikova, I. S., Mirraximova, M. H., Ibragimova, S. A., & Yunusjanovna, N. N. (2020). The prevalence of symptoms of allergic

- diseases in children residing in industrial regions of Uzbekistan. International Journal of Psychosocial Rehabilitation, 24(4), 2105-2115.
2. DS, K. (2022). PREVALENCE OF ALLERGIC DISEASES IN CHILDREN UNDER HOT CLIMATIC CONDITIONS. In Materials of International Scientific-Practical Conference. «Only English: Topical Issues of Healthcare.
 3. Ibodullaevna, S. F., Rustamovna, K. S., Gairatovna, A. D., & Abdurakhmonovna, S. H. (2022). PREVALENCE AND RISK FACTORS OF ALLERGIC DISEASES IN CHILDREN IN HOT CLIMATIC CONDITIONS. Art of Medicine. International Medical Scientific Journal, 2(3).
 4. Imamova, A. O., & Toshmatova, G. O. (2023). Protecting works and hygienic assessment of nutrition of preschool children in Tashkent. European International Journal of Multidisciplinary Research and Management Studies, 3(02), 47-50.
 5. Imamova, A. O., Salomova, F. I., Axmadalievna NO, N. D., Toshmatova, G. A., & Sharipova, S. A. (2022). Ways to optimize the formation of the principles of a healthy lifestyle of children. American Journal of Medicine and Medical Sciences, 12(6), 606-608.
 6. Jalolov, N. N., & Imamova, A. O. (2023). The Role of Nutrition in the Management of Chronic Hepatitis. European International Journal of multidisciplinary research and management studies, 3(02), 28-34.
 7. Jalolov, N. N., Sobirov, O. G., Kabilzhonova, S. R., & Imamova, A. O. (2023). The role of a healthy lifestyle in the prevention of myocardial infarction. Neo Sci Peer Rev J, 9, 8-14.
 8. Jalolov, N. N., Sultonov, E. Y., Imamova, A. O., & Oblokulov, A. G. (2023). Main factors of overweight and obesity in children. Science Promotion, 1(2), 2-4.
 9. Khobiljonova, S. H. THE ROLE OF SPORTS IN THE FORMATION OF A HEALTHY LIFESTYLE AMONG YOUNG PEOPLE Yuldasheva FU Tashkent Medical Academy, Uzbekistan Imamova AO.
 10. Kobiljonova, S. R., & Jalolov, N. N. (2023). Reproductive and perinatal outcomes born by caesarean section.

11. Kobiljonova, S. R., Jalolov, N. N., Sharipova, S. A., & Mirsagatova, M. R. (2022). COMBINED SKIN AND RESPIRATORY MANIFESTATIONS OF FOOD ALLERGY IN CHILDREN.
12. Kobiljonova, S. R., Jalolov, N. N., Sharipova, S. A., & Tashmatova, G. A. (2023). Clinical and morphological features of gastroduodenitis in children with saline diathesis. *American Journal of Pedagogical and Educational Research*, 10, 35-41.
13. Kobiljonova, S., Sultonov, E., Sultonova, D., Oblokulov, A., & Jalolov, N. (2023). CLINICAL MANIFESTATIONS OF GASTROINTESTINAL FOOD ALLERGY. *Евразийский журнал медицинских и естественных наук*, 3(5), 142-148.
14. Niyazova, O. A., & Imamova, A. O. (2023). Improving the organization of the provision of medical services and the Digital environment. *European International Journal of Multidisciplinary Research and Management Studies*, 3(02), 41-46.
15. Sadullayeva, X. A., Salomova, F. I., & Mirsagatova, M. R. (2023). Problems of Pollution of Reservoirs in the Conditions of Uzbekistan. *Miasto Przyszłości*, 33, 102-106.
16. Salomova, F. I. (2022, November). Formation of the principles of a healthy lifestyle in preschool children. In *Uzbekistan-Japan International Conference «Energy-Earth-Environment-Engineering»*.
17. Salomova, F. I. (2022, November). Problems of atmospheric air pollution in the Republic of Uzbekistan and the ways of their solution. In *Uzbekistan-Japan International Conference «Energy-Earth-Environment-Engineering»*.
18. Salomova, F. I., Mirrakhimova, M. K., & Kobilzhonova, S. R. (2022). Influence of environmental factors on the development of atopic dermatitis in children. In *European journal of science archives conferences series*.
19. Salomova, F. I., Rakhimov, B. B., Jalolov, N. N., Sultonov, E. Y., & Oblakulov, A. G. (2023). Atmospheric air of the city of Navoi: quality assessment. *British Journal of Global Ecology and Sustainable Development*, 15, 121-125.
20. Salomova, F. I., Sharipova, S. A., Toshmatova, G. O., Yarmukhamedova, N. F., Mirsagatova, M. R., & Akhmadaliev, N. O. (2020). Psychoemotional state of the universities' teaching staff in Uzbekistan. *Indian Journal of Forensic Medicine and Toxicology*, 14(4), 7984-7994.

21. Salomova, F., Akhmadaliev, N., Sadullayeva Kh, A., Imamova, A., & Nigmatullayeva, D. Z. (2023). Hygienic characteristics of the social portrait, conditions and lifestyle of infectious diseases doctors. JournalNX-A Multidisciplinary Peer Reviewed Journal, 9(2), 163-7.
22. Salomova, F., Sadullaeva, K., Samigova, N., & Sadirova, M. (2022). Study of regional features of dynamics of acute intestinal diseases in the Republic of Karakalpakstan (Livorno, Italy конф.). Diss. Livorno, Italy.
23. Salomova, F., Sadullayeva, H., Sherkuzieva, G., & Yarmuhamedova, N. F. (2020). State of atmospheric air in the republic of Uzbekistan. Central Asian Journal of Medicine, 2020(1), 131-147.
24. ShR, K., Mirrakhimova, M. H., & Sadullaeva, H. A. (2022). Prevalence and risk factors of bronchial asthma in children. Journal of Theoretical and Clinical Medicine, 2, 51-56.
25. Yarmukhamedova, N. F., Matkarimova, D. S., Bakieva, S. K., & Salomova, F. I. (2021). Features of the frequency of distribution of alleles and genotypes of polymorphisms of the gene Tnf-A (G-308a) in patients with rhinosinusitis and the assessment of their role in the development of this pathology. International Journal of Health and Medical Sciences, 4(1), 164-168.
26. Yaxyoyevich, Z. S., & Husanovna, T. M. (2024). Chronic Liver Diseases And Humoral Factors Of Immunity.
27. Ахмадалиева, Н. О., Саломова, Ф. И., Садуллаева, Х. А., Шарипова, С. А., & Хабибуллаев, С. Ш. (2021). Заболеваемость преподавательского состава ВУЗа технического профиля. Oriental renaissance: Innovative, educational, natural and social sciences, 1(10), 860-871.
28. Жалолов, Н. Н., Нуриддинова, З. И., Кобилжонова, Ш. Р., & Имамова, А. О. (2022). Главные факторы развития избыточного веса и ожирения у детей (Doctoral dissertation, Doctoral dissertation, O ‘zbekiston Respublikasi Sog ‘liqni Saqlash vazirligi, Toshkent tibbiyot akademiyasi, Koryo universiteti “Atrof muhit muhofazasining dolzarb muammolari va inson salomatligi” xalqaro ishtirok bilan Respublika 9-ilmiy-amaliy anjumani materiallari to ‘plami 153 bet).
29. Жалолов, Н., Зокирходжаев, Ш. Я., & Саломова, Ф. И. (2022). Сурункали гепатит билан касалланган беморларнинг ҳақиқий овқатланишини баҳолаш.«Тиббиётдаги замонавий илмий тадқиқотлар: долзарб

- муаммолар, ютуқлар ва инновациялар». In мавзусидаги халқаро илмий-амалий конференция.(2022, May).
30. Кобилжонова, Ш. Р., Жалолов, Н. Н., & Журабоев, М. Т. (2022). Тугри овкатланиш спортчилар юкори натижалари гарови.
 31. Кобилжонова, Ш. Р., Миррахимова, М. Х., & Садуллаева, Х. А. (2022). Распространенность и факторы риска бронхиальной астмы у детей. Журнал теоретической и клинической медицины, (2), 51-56.
 32. Кобилжонова, Ш. Р., Миррахимова, М. Х., & Садуллаева, Х. А. (2022). Значение экологических факторов при бронхиальной астме у детей.
 33. Миррахимова, М. Х., Нишонбоева, Н. Ю., & Кобилжонова, Ш. Р. (2022). Атопик дерматит билан касалланган болаларда панкреатик етишмовчиликни коррекциялаш.
 34. Садуллаева, Х. А., Саломова, Ф. И., Мирсагатова, М. Р., & Кобилжонова, С. Р. (2023). Проблемы загрязнения водоемов в условиях Узбекистана.
 35. Саломова, Ф. И. (2001). Оценка состояния здоровья и физического развития детей, поступающих в детские дошкольные учреждения. Ж. Патология, (4), 21-23.
 36. Саломова, Ф. И. (2008). Особенности физического развития школьников с нарушениями осанки. Вестник Санкт-Петербургской государственной медицинской академии им. ИИ Мечникова, (4), 48-50.
 37. Саломова, Ф. И. (2009). Функциональное состояние опорно-двигательного аппарата школьников с нарушениями осанки. Травматология и ортопедия России, (1), 70-73.
 38. Саломова, Ф. И. (2009). Характеристика физического развития школьников с нарушениями осанки. Вестник Новосибирского государственного университета. Серия: Биология, клиническая медицина, 7(3), 68-71.
 39. Саломова, Ф. И. (2010). Гигиенические основы профилактики нарушений осанки и начальных форм сколиозов у детей и подростков. Автореф. дисс..... докт. мед. наук. Ташкент.
 40. Саломова, Ф. И., & Тошматова, Г. О. (2012). Эпидемиология мастопатии и особенности заболеваемости женщин, страдающих мастопатией. Врач-аспирант, 52(3.1), 222-228.

41. Саломова, Ф. И., Садуллаева, Х. А., & Самигова, Н. Р. (2022). Загрязнение атмосферы соединениями азота как этиологический фактор развития СС заболеваний г. ООО" TIBBIYOT NASHRIYOTI MATBAA UYT.
42. Саломова, Ф. И., Садуллаева, Х. А., Миррахимова, М. Х., Кобилжонова, Ш. Р., & Абатова, Н. П. (2023). Загрязнение окружающей среды и состояние здоровья населения. *Yosh olimlar tibbiyot jurnali*, 1(5), 163-166.
43. Саломова, Ф., Садуллаева, Х., & Кобилжонова, Ш. (2022). Гигиеническая оценка риска развития аллергических заболеваний кожи у детского населения. Актуальные вопросы профилактики стоматологических заболеваний и детской стоматологии, 1(01), 88-91.
44. Шеркузиева, Г. Ф., Саломова, Ф. И., & Юлдашева, Ф. У. (2023). Результаты санитарно-химических исследований воды.
45. Sharipova, S. A., & Ikramova, N. A. (2024). CONSEQUENCES OF NOT BREASTFEEDING FOR THE MOTHER AND INFANT. *Web of Medicine: Journal of Medicine, Practice and Nursing*, 2(12), 273-276.
46. Mirkhamidova, S., Rustamova, H., Sharipova, S., Mamadjanov, N., Tuychieva, D., & Karimbayev, S. (2021). Methods of HIV infection prevention used by nurses. URL: <http://repository.tma.uz/xmlui/handle/1/1617>.
47. Salomova, F. I., Yuldasheva, F. U., Sherkuzieva, G. F., & Sharipova, S. A. (2024). STUDYING THE EFFECT OF IRRATIONAL NUTRITION ON THE STUDENT'S BODY.