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DISEASE-CAUSING DISEASES AND THEIR GEOGRAPHICAL DISTRIBUTION

Komilova Nilufar
Professor, Department of Economic and
Social Geography National University of Uzbekistan named after Mirzo Ulugbek.
nkomilova75@mail.ru

Ravshanov Aliqul
Associate Professor of Social and Economic Geography,
Samarkand State University

Abduvalieva Zulfiya
Andijan State University Basic Doctoral Student of the Department of Geography
e-mail: zulfiyaxurshidbek1217@mail.com

Allanov Shuxrat-
Head of the Department Geography at
Termiz State University, Research Work.
allanov52@mail.ru

Kholmominov Mirzo
Master Student of the Faculty of Geography and Natural Resources,
National University of Uzbekistan, named after Mirzo Ulugbek.

Annotation
The article provides information on the characteristics of the spread of infectious diseases, the history of their study. In particular, in Uzbekistan, the characteristics of the prevalence of this group of diseases were analyzed by regions. Attention is paid to regional data on anthrax and brucellosis.

Keywords: disease geography, disease geography, nosogeographic geography, medical geography, medical geographical zoning.

Introduction

It is known that the term "disease area" or "hearth" was first mentioned in the works of the Russian Scientist E. N. Pavlovsky. These are the areas that should be the main object of nosogeographic research. (Komilova, 2020).

It should be noted that the issue of zoning of diseases is extremely complicated, as they do not comply with the administrative-territorial units. Their range can be absolutely far from each other. Such areas are called scattered or intermittent areas in medical geography. The idea of natural foci of disease was first mentioned in the work of D.K Zabolotny in the late nineteenth and early twentieth centuries. In 1939, academician EN Pavlovsky published his theory of natural foci of infectious diseases at a meeting of the Academy of Sciences of the former USSR, and in 1964 published a monograph on the subject. (Komilova, 2020).

A nosogeographic outbreak is a place where a disease occurs. From a natural geographical point of view, it corresponds to the idea of EN Pavlovsky about the natural foci of infectious and parasitic diseases. In economic and social geography, they can be known as housing, industrial enterprises and centers. A nosogeographic area is a direct distribution of a certain disease or an area where the disease is present and forms the basis of a nosogeographic region. From an epidemiological point of view, this process is similar to the laws of geographical diffusion. Nosogeographic areas are not only infectious diseases, but also represent the territorial composition of all diseases. (Komilova N. K., 2021).

According to the World Health Organization, human diseases are divided into several groups according to their characteristics. Respiratory, cardiovascular, and digestive diseases are the largest groups. Natural processes play an important role in the transmission of infection. For example, open water basins become more polluted with runoff, which leads to the spread of typhoid fever, which spreads through the water during the cold season (Volovskaya, 1977). If people spend a lot of time indoors in the winter, they can get respiratory infections at this time of the year.

Social factors have a greater impact on the course of the epidemic than natural factors. The social factor includes all living conditions: housing, number of people living in them, sewerage, condition of living facilities, material well-being, food composition, level of sanitary culture, health status, migration, population, migration processes. situation and others are understood. In addition, in medical geographical research, the analysis of territories from the point of view of the nosogeographic situation is also profound. In our opinion, the nosogeographic situation or situation is, first of all, the mortality rate of the population in a certain place or area, including the infant mortality rate, the average life expectancy and the overall morbidity rate, the incidence of certain group of diseases. The nosogeographic situation, as a very fragile territorial system, is highly variable under the influence of various natural and socio-economic factors. In particular, factors such as environmental pollution have a significant impact on the spread of infectious diseases. (Komilova N. K., 2021).

The study found that it was necessary to study the prevalence of brucellosis, which is the most common among the population of Surkhandarya, Kashkadarya, Samarkand and Navoi regions, but also specific to livestock. This disease is one of the diseases that cause natural foci. The idea of natural foci of disease was first expressed in the late nineteenth and early twentieth centuries in the work of DK Zabolotny (Zabolotny, 1929). In 1964 he published a monograph on the subject. The theory of natural foci of disease, the origin and formation of infectious diseases are studied in many disciplines: epidemiology, parasitology, medical geography, biogeography, ecology. (Komilova, 2019). The parasitic system (causative agent-carrier) associated with the human infectious process plays an important role in the study of foci of disease (Voronov AG, 1981). It is well known that brucellosis is one of the most common infectious diseases, not only in our country, but also in the world today. Although the disease has been known since the time of Hippocrates, it was studied in detail by the Scottish physician and microbiologist David Bruce (1855-1931), which is one of the most widespread diseases in our country. Although the disease has been reported to be one of the most contagious diseases of the population in the centuries before Christ, its scientific study began in 1860. The disease was first diagnosed by a Scottish physician and microbiologist David Bruce in goat's milk (Zheludkov MM, 2010.).

Outbreaks of brucellosis are widespread in all parts of the world, and most of the incidence and transmission of the disease is specific to livestock areas. In Uzbekistan, the incidence of this disease has increased in recent years (Table 1). Brucellosis belongs to the group of zoonoses and is the main source of the disease in farm animals: goats, sheep, pigs, cows, horses, camels. In addition, wild animals can be deer, foxes, pigs, wolves, rodents and others (Saitkulov BS, 2005). Nine species are known, of which six are more widespread. Outbreaks appear to be exacerbated during pregnancy and in children. The incidence is higher in wild animals than in domestic animals. However, the incidence of wild animals in animals living in natural ecosystems has been little studied. Studies have been conducted mainly on farm animals (Rothschild, 1992). For humans, the source of the disease is pets. The probability of contracting the disease in the population living in the hearth is 70%. Infectious diseases of goats and sheep infected with this disease are widespread, mainly in spring and summer, and partly in autumn. Seasonality is not so noticeable for the type of cattle, and the state of burning is considered weak (Rudnev, 1955). The causative agent is excreted in animal urine, milk and various excretions. Therefore, their hair, food, and their excretion are a source of human contamination, given the resistance of Brucella to the environment.

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Table 1. The incidence of brucellosis in the population of Uzbekistan (Per 100,000 people)

Territories	2010	2015	2020	Burning indexes
Republic of Uzbekistan	1,5	2,8	1,2	0,8
Republic of Karakalpakstan	0,2	0,2	-	-
Andijan	-	0,2	0,1	0,1
Buhara	6,2	3,0	2,1	0,3
Djizzak	7,2	9,3	3,6	0,5
Navai	3,2	10,6	3,5	1,0
Namangan	0,1	-	-	0
Samarkand	1,4	1,7	1,1	0,7
Syrdarya	3,1	8,9	1,4	0,4
Surkhandarya	0,8	12,5	1,9	2,3
Tashkent	1,1	1,0	-	-
Fergana	-	0,1	-	-
Horezm	-	-	-	-
Kashkadarya	3,0	3,8	5,2	1,8
Tashkent c.	1,7	0,8	0,3	0,1

Source: The table was developed by the author based on data from the Ministry of Health.

Microbes enter the body by aerogenous means through the upper respiratory tract of wool and dust. The microbes in the dust particles enter the body through the conjunctival mucosa. Occupational factors are also important in the epidemiology of brucellosis. These activities include animal handlers, animal processors and veterinarians, as well as laboratory workers. While brucellosis is seasonal, it is more prevalent in the spring and summer months. Brucellosis has been studied in detail in medicine by GP Rudnev (Rudnev, 1955). Brucellosis is transmitted to animals through food or water and others. When we zoning its distribution in the region from a medical geographical point of view, we were able to identify the following cases. Navoi region is isolated in Uzbekistan in terms of brucellosis. The highest rates of brucellosis in the last 10-15 years are in Navoi region. In 2005 it was 11.5 people, in 2010 it was 3.2 people, and in 2016 it was 11.1 people. The natural and ecological conditions of the region, the peculiarities of the social situation of the population, the leading role of the livestock sector in the economy are the reasons for the rapid growth of this disease in the region. In this study, the number of brucellosis cases among the population of Samarkand and Navoi regions was analyzed and divided into the following areas related to thespread of the disease:

1. The situation is extremely tense, especially in Nurabad, Khatirchi, Nurata, Navbahor and Karmana districts of the region. This means that Navoi region has the highest incidence of brucellosis in the country. For this reason, this region is a

typical outbreak of brucellosis, and we consider it appropriate to isolate it as a separate district.

2. Surkhandarya region, where the incidence of brucellosis is 10.7 per 100 thousand populations.
3. The third district (8.5 people), which is divided on the basis of the number of cases of brucellosis and the conditions that cause it, is a region that is slightly lower than the national average.

It should be noted that the incidence of certain diseases in the population is not the same everywhere in the provinces or other territorial units. For example, in 2020, the incidence of brucellosis in Samarkand region was 1.1 per 100,000 people, and although it is one of the last places in terms of this incidence, Nurobod district in the region has a high incidence.

Areas with a high incidence of the disease may be found not only in large areas, but also in small areas, and such areas may be very widespread in large areas. In recent years, nosogeographic outbreaks of various infectious diseases have been formed in the border areas of the present-day Samarkand and Jizzakh regions, in particular, Bulungur, Gallaaral and Bakhmal districts.

In recent years, much attention has been paid to the prevention of highly contagious diseases. In particular, anthrax is one such disease. The sources of the disease are domestic animals as well as various wild animals. Farm animals are not only a source of disease, but also a source of disease: meat, meat products: milk, dairy products, wool, leather, bone and other products. In general, due to the movement of medical institutions in the country, these diseases have decreased, albeit slightly, every year. Anthrax is an acute infectious disease of humans and animals, characterized by changes and tumors in the skin and subcutaneous tissue.

The disease has been known for a long time, and its course and manifestation are found in a number of ancient manuscripts, but the causative agent of the disease was identified in the 1850s and proved by evidence. In 1881, L.A. Pasteur conducted a special experiment in the field of protection of animals from disease, and this was noted as a historic discovery. Ibn Sina, Hippocrates, Homer, and Ovid described it as "a disease transmitted from animals to humans" (Komilova N. K., 2021). In ancient times, anthrax was also called "sacred flame", "Persian flame", "Iranian flame". In 1788, during the epizootic in Siberia, the Russian Scientist S.S Andreevsky transmitted the disease from animals to animals, proving that the disease is the same as that of humans and animals, and recommended that the disease be called "anthrax." He described the pathological features of anthrax and developed methods of treatment and prevention. The causative agent of anthrax was first isolated in 1876

by R. Koch, in 1881 by L. Pasteur, and in 1883 by LS Tsenkovsky invented anthrax vaccines. Epizootology, geography, condition of epizootic foci and specific problems of disease prevention in Uzbekistan have been studied in detail by BS Saidkulov and G. Mengliev. (Saitkulov, 2005).

There are also anthrax outbreaks in Navoi, Samarkand, Namangan, Kashkadarya, Tashkent, Bukhara and a number of districts of the region. In particular, they meet in Urgut, Jambay, Bustonlik, Ahangaran, Gijduvan, Kitab, Namangan districts, most of the year. Failure to use special vaccines against the disease in an epizootic manner can lead to its re-emergence in old foci of the disease. The source of the disease is sick animals. They, in turn, disperse the pathogen into the environment and affect the environment. The population is mainly engaged in tanneries, tanneries, tanneries, butcher shops, butchers, butchers, butchers, butchers can also eat the products of sick animals without pre-cooking and can be eaten quickly. The causative agent is excreted in saliva, urine, feces and milk. Thus, the external environment (soil, hay, water, etc.) becomes a factor in the spread of the pathogen (Voronov, 1981).

Table 2 Natural foci and zoonotic infections (per 100,000 population)

№	Type of disease	2005	2010	2015	2020
1	Anthrax	-	0,0	0,0	0,1
2	Brucellosis	2,2	1,6	2,8	1,2
3	Tularemia	-	-	-	-
4	Hemorrhagic fevers	0,0	0,0	0,1	0,0

Source: Compiled by the authors on the basis of data from the State Statistics Committee of the Republic of Uzbekistan.

When analyzing the incidence of natural foci and zoonotic infections in Uzbekistan, it can be seen that they have increased slightly over the past decade. This is especially true in the dynamics of brucellosis and anthrax. The incidence of brucellosis was 1.2 per 100,000 in 2020, compared to 2.8 in 2015 (Table 2).

Today, the geographical foci of anthrax are Kyzyltepa, Navbahor, Tomdi, Uchkuduk Karmana of Navoi region, Nurabad, Koshrabat, Urgut districts of Samarkand region. In Karmana Navbahor, Nurata, Kyzyltepa, Tomdi, Uchkuduk districts of Navoi region, a number of outbreaks of anthrax have been observed over the past 50-60 years. In the territory of Karmana district 6 cases of anthrax were registered, the disease was first registered in 1944 in the village of "Arabhona" of the present "Hazora" collective farm near the Sand well. In 1953 it was again registered among cattle in those areas.

1945 in Karavultepa village of Navbahor district, 1946 in Kalkanota village of S.Juraev collective farm, 1946 in Uchtut village, 1946 in Eroni village, 1948 in Arabsaroy village. Five outbreaks of anthrax have been reported in Nurata district. In 1947 the disease was re-registered in the same furnace. In 1934-2004, six unhealthy anthrax areas were registered in Kyzyltepa district, including Orta Kurgan, Toshrobot, Gardiyon, Zarmitan and Dasht villages. cases were re-registered in 1997 as a new, active outbreak of the disease. In the territory of Tomdi district there are 2 unhealthy areas for anthrax, which were first identified in 1940 around the spring Koriz Bulak of the current collective farm "Kerez Bulak". In 1944, a outbreak was detected in the village of Jingildi. Six anthrax cases were first detected in Uchkuduk district in 1937 around the Juzkuduk well of the present-day Juzkuduk collective farm. The disease has been registered twice in a row around the Jalgiza well of the Uzunkuduk collective farm.

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