TUBERCULOSIS INCIDENCE IN UNFAVORABLE FARMING CONDITIONS

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Annotation. In 2022, tuberculosis (TB) remained one of the world’s most serious public health challenges, claiming approximately 1.3 million lives, including about 167,000 individuals co-infected with HIV. Globally, TB ranks as the second leading cause of death from infectious diseases, following COVID-19, and surpasses HIV/AIDS in mortality rates.

The urgency and global significance of the TB problem are largely attributed to the emergence and spread of drug-resistant strains of *Mycobacterium tuberculosis*, as well as the high susceptibility of unvaccinated populations. The chronic course of the disease, often due to delayed medical intervention or refusal of etiological therapy, further exacerbates the burden of tuberculosis worldwide.

In addition to human cases, tuberculosis among livestock and small ruminants represents a critical zoonotic risk, contributing to the transmission of infection to humans. However, the clinical manifestations of tuberculosis in animals remain poorly characterized in the available literature, which hinders timely diagnosis and effective control measures.

Currently, there is a lack of reliable diagnostic tools and specific preventive strategies for detecting tuberculosis in farm animals, particularly in dysfunctional or poorly managed farms where hygienic and veterinary conditions are suboptimal. These factors contribute to the sustained circulation of the pathogen, creating favorable conditions for cross-species transmission and increasing the epidemiological threat to both animal and human health.

Given these challenges, comprehensive monitoring, early diagnosis, and strict implementation of preventive veterinary measures are essential components in the strategy to reduce the spread of tuberculosis in agricultural settings and to protect public health.

Introduction.

Tuberculosis (TB) remains one of the most significant infectious diseases affecting both humans and animals worldwide. According to the World Health Organization, in 2022 tuberculosis caused approximately 1.3 million deaths, including about 167,000 cases among people co-infected with HIV. Globally, TB ranks as the second leading cause of death from infectious diseases, following COVID-19, and continues to exceed HIV/AIDS in mortality rates.

The persistence of tuberculosis as a global health concern is largely associated with the emergence and dissemination of multidrug-resistant (MDR) and extensively drug-resistant (XDR) strains of *Mycobacterium tuberculosis*. In addition, the high susceptibility of unvaccinated individuals, the chronic nature of the disease, and the delay or refusal of appropriate etiotropic therapy contribute to the unfavorable epidemiological situation.

Particular attention should be paid to the zoonotic aspects of tuberculosis, as infection can be transmitted from livestock and small ruminants to humans. Despite the importance of this problem, the clinical symptoms of tuberculosis in animals have not been sufficiently described in the scientific literature. This lack of knowledge complicates the early diagnosis, differentiation, and prevention of the disease among farm animals.

The situation is especially concerning in dysfunctional or poorly managed farms, where unsanitary conditions, inadequate veterinary supervision, and limited diagnostic capacities create favorable circumstances for the maintenance and spread of infection. The absence of effective diagnostic tools and specific preventive measures in veterinary practice further aggravates the problem, increasing the risk of cross-species transmission and posing a serious epidemiological threat to both animal and human health.

Therefore, the study of tuberculosis infection on dysfunctional farms is of great scientific and practical importance. It aims to improve the understanding of epidemiological characteristics, develop more reliable diagnostic approaches, and strengthen preventive and control measures to reduce the spread of tuberculosis in agricultural environments.

The purpose of the study. He will study tuberculosis infection on disadvantaged farms from animals.

Materials and methods of research. In accordance with the "Law on Veterinary Medicine" of the Republic of Uzbekistan, it is necessary to ensure the protection of the population from infectious diseases common to humans and animals. Given that an animal is the cause of human infection, great attention should be paid to epizootic monitoring, including those designed to track the epizootic situation in order to optimize prognostic conclusions and management decisions to reduce risks to the population. But, despite the success in developing a practical and theoretical

basis for monitoring the epizootic situation of infectious diseases, it is quite obvious that it needs to be improved in case of significant diseases for specific territories.

Tuberculosis poses a serious danger, despite the progress in public health: a third of the world's population is infected. And only together can this disease be overcome.

Research results. Tuberculosis is a chronic infectious disease characterized by the formation of tuberculosis in parenchymal organs, intestines and other tissues. The disease is caused by the causative agent of tuberculosis Mycobacterium tuberculosis. There are several main types of pathogen pathogenic to humans and animals. Modern scientific data have established that the causative agent of tuberculosis can affect animals not only of the species to which it has adapted, but also many other species.

In animals, 5 pathogenic mycobacterium species have epizootic significance: 1) M.bovis is the causative agent of tuberculosis in cattle, pathogenic for domestic and wild ruminants, humans; 2) M.tuberculosis is the causative agent of human tuberculosis, pathogenic for humans, primates, dogs, parrots; 3) M.avium is the causative agent of avian tuberculosis, pathogenic for birds, pigs, cats, dogs; 4) M.microti is the causative agent of tuberculosis in mice, mouse–like rodents; 5) M.piscium is the causative agent of tuberculosis in cold–blooded.

Thus, a human–type pathogen, except for humans, can infect dogs, cats, pigs, monkeys, parrots, and guinea pigs from laboratory animals. The causative agent of bovine tuberculosis, in turn, in addition to cattle, can also infect humans, cats, pigs, goats, sheep, dogs and hares. The causative agent of avian tuberculosis affects pigs, horses, cats and, as has been proven recently, quite often humans. It is not possible to determine the exact number of unproductive pets, but if we assume that every third Uzbek family contains a cat, and every fifth family contains a dog, then, according to independent experts, there may be at least 15.9 million dogs and cats in Uzbekistan. At the same time, the proportion of purebred dogs and cats does not exceed 2%. Based on the data obtained, it is assumed that Central Asia occupies the fifth place in the world and the leading position in Europe in terms of the number of cats and dogs. Thus, small pets are the most numerous and common. The peculiarity of the habitat of unproductive animals of cats and dogs is that their habitat is populated areas and directly human habitation. This factor can significantly negatively affect the hygiene of the environment: the lack of special places for walking dogs and cats, uncontrolled charity and the availability of food waste contribute to the growth of the number of stray animals in cities and towns. In addition, this situation attracts wild and synanthropic animals to human habitation, which can, in turn, lead to an unfavorable epizootic situation.

Also, the habitation of animals (cats and dogs) among humans contributes to the spread of infectious and invasive diseases of humans and other domestic animals. So, for example, a dog is a source of many infectious and parasitic diseases transmitted to humans. Unfortunately, in our country there is no statistical database

on the number of small domestic (unproductive) animals, so it is not possible to track the epizootological geography of infectious diseases of dogs and cats. Studies of the features of epizootic processes in various regions are of extreme importance in the development of a set of antiepizootic measures. Despite the achievements of veterinary science and practice in the prevention and treatment of infectious animal diseases, these diseases continue to damage the economies of various countries. Due to the development of globalization processes and the deterioration of the environmental situation, close contacts between humans and various animal species occur much more often than before.

Discussion. Therefore, there is evidence that new diseases may appear in the near future that can cause even more damage. In particular, this is due to the fact that some animals that did not previously live in close proximity to humans have been domesticated, and the modern food production system is imperfect and can lead to animal epidemics that can threaten human health and life. Climate change has led to changes in the habitats of migratory insects and birds, which are carriers of pathogens of various diseases. In addition, changes in the habitat of humans and animals also lead to changes in the resistance and pathogenesis of pathogens of infectious diseases.

According to the data provided by the World Health Organization, there are approximately nosological forms of diseases in the world that are common to animals and humans. These diseases include anthrax, rabies, tuberculosis, brucellosis, glanders, tick-borne encephalitis, leptospirosis, foot-and-mouth disease, actinomycosis, Cu fever, echinococcosis, diphyllobothriosis, salmonellosis, etc. Pets are ubiquitous. It is worth considering that the number of these animals directly depends on the degree of development of urbanized territories. The population density of dogs and cats can reach huge numbers. Thus, according to WHO, the global dog population was estimated at more than 0.5 billion individuals. And the number of cats in the world does not exclude 1 billion animals. All sick animals (regardless of the type of pathogen) pose a danger to human health. In turn, a person with tuberculosis is a source of infectious agent for animals, from which other healthy people can become infected. Many cases of the incidence of human-type tuberculosis in monkeys of one of the menageries have been described. All of the above indicates the need for a comprehensive fight against tuberculosis in both humans and all tuberculosis-susceptible animal species. In recent years, simultaneously with the growth of the well-being of the urban population, there has been a tendency to increase the number of small pets up to critical indicators. At the same time, there are statistics that the number of dogs and cats has increased by 1.4 times in recent decades, and the population by 1.2 times.

Most multiply resistant bacteria are characterized by reduced virulence – the ability to spread and cause disease in the host organism. New strains of tuberculosis combined with climate-related crop failures will lead to mass human migration and infection of small animals. For thousands of years, tuberculosis has continued to be

one of the most difficult problems of human and animal infectious pathology, causing significant economic damage to livestock and posing a real danger of human infection.

Animals transported across the border of the Republic of Uzbekistan must be kept in quarantine for at least 21 days, during which thermometry and diagnostic tests of animals for brucellosis and tuberculosis are carried out.

Currently, in many countries there is an increase in the incidence of tuberculosis in people, especially children. Tuberculosis occupies a special place among infectious animal diseases. It is peculiar in that for many years it can occur in a latent form, without showing clinical signs of the disease, without affecting the productivity and vital activity of animals. Dogs and cats are an integral part of megacities, provincial towns, villages and villages, where they are in close contact with humans and other animal species.

Conclusion. Thus, studying the role and place of infectious diseases in the general structure of pathology of domestic animals, clarifying the features of their epizootic manifestation in the urban ecosystem, as well as improving the epizootic surveillance system for infectious diseases of domestic carnivores is a very urgent task, the solution of which requires urgent solution. The emergence of antibiotic-resistant tuberculosis has become a special danger, unlike the threat from the so-called superbugs and much more serious.

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