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EPIZOOTIC SITUATION OF PASTEURELLOSIS IN POULTRY

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Abstract
The article provides information on the prevalence, epidemiology and seasonality of pasteurellosis among poultry.

Keywords: Cultural-morphological, hemorrhagic diathesis, serosis, epicardium, fibrinous-hemorrhagic inflammation, croupous pneumonia, meat peptone agar, meat peptone broth.

Introduction

Topic relevance. Poultry farming occupies a special place in the economy of Uzbekistan, and great importance is attached to the development of this sector. The development and profitability of poultry farming depends on factors such as increasing the number of poultry in state, farm and private farms, increasing their productivity, obtaining healthy chicks, their proper care, and protection from various diseases. Various infectious diseases of poultry are a great threat to poultry farming. It is well known that pasteurellosis, which occurs among poultry, causes great economic damage to poultry farming and is one of the urgent problems. The lack of biological and chemical preparations in the veterinary sector further complicates the problem and causes a wider spread of diseases. The widespread spread of pasteurellosis among poultry is causing significant economic damage to many poultry farmers.

The level of knowledge of the problem. Poultry pasteurellosis is a widespread infection: it affects all types of domestic and wild poultry. The disease is most common in chickens, somewhat less common in waterfowl - ducks and geese, and even less common - in pigeons. In natural conditions, pasteurellosis affects swans, pheasants, pheasants, parrots, crows, sparrows, blackbirds, quails.

Various vectors of infection play an important role in the spread of poultry pasteurellosis. It has been established that worms that have parasitized a sick bird can remain as carriers of pasteurellosis for a long time [1, 2].

The results of the experiments are consistent with the opinion of most researchers about the role of free-ranging birds and rodents as a possible source of pasteurellosis for farmed poultry [3, 4, 5].

The decrease in the body's resistance of poultry carriers of pasteurellosis may not be associated only with a lack of food. Resistance is also affected by the conditions of keeping poultry, and, first of all, the microclimate and density of housing. In recent years, in connection with the construction of large-scale poultry houses, the number of cases of poultry disease in them has increased. Recurrent outbreaks of the disease are also observed on farms due to the lack of

heating and ventilation in poultry houses or their malfunction. The litter accumulated in manure bins (pits) begins to decompose in the spring, as a result of which the microclimate in poultry houses sharply worsens, the resistance of the poultry organism decreases, especially in dense housing, which increases the epizootic of pasteurellosis.

Currently, pasteurellosis in poultry is reported in North, Central and South America, Asia and Europe, India, Pakistan, Iran, Iraq, Cameroon, Laos, the Philippines, Indonesia, Vietnam, Cambodia, South Korea, and Thailand. In Europe, pasteurellosis is found in Italy, Poland, Romania, Hungary, Ukraine, and Russia. It is also reported in Kyrgyzstan, Turkmenistan, and Kazakhstan [6].

An increase in the number of unhealthy farms has been noted in terms of infectious diseases, in particular, pasteurellosis ranks third in Russia after colibacillosis and salmonellosis [6].

Materials and methods of the study. The material for the study was poultry belonging to the population of the villages of Jarboshi, Kushkanot, Istiqbol, Shamaton, Khujakhurason, Boygundi, and Rovot of the Shahrisabz district of the Kashkadarya region. Epidemiological, clinical, and pathoanatomical methods were used in the studies.

Research object. The research was carried out on the basis of research conducted in the laboratories of immunology and biotechnology and microbiology of the Veterinary Research Institute.

The epizootic situation, distribution, specific features of the course and clinical signs of pasteurellosis, a disease widespread among poultry belonging to the population of the villages of Jarboshi, Kushkanot, Istiqbol, Shamaton, Khujakhurason, Boygundi, Rovot, Shahrisabz district of the Kashkadarya region of the republic, was studied, as well as diagnosis, isolation of epizootic strains of the disease and their cultural, morphological, and biological characteristics.

The purpose of the study. To determine the epizootology of pasteurellosis in poultry.

Research results: To determine the cultural and morphological characteristics of the isolated Pasteurella, inoculations were sown on meat peptone broth, meat peptone agar nutrient media from the pathological samples provided and placed in a thermostat at a temperature of 37-38^{0}C for cultivation. Attention was paid to the growth of the pathogen and the nature of its growth, depending on the formation of turbidity and meat peptone agar colonies in meat peptone broth media. Smears were prepared from nutrient media on glass slides. After fixation, the smears were stained using the Gram method and subjected to microscopy. In microscopy, attention was paid to the appearance, location, shape, Gram staining of the pathogen, etc.

In order to study the epizootic situation of poultry pasteurellosis in some district farms of the Kashkadarya region of our republic, business trips were organized to some farms of the city of Shahrisabz, Kashkadarya region, and information about the disease was collected by meeting with veterinary specialists working in the area. It was determined that poultry often suffer from

diseases with clinical and pathological anatomical changes characteristic of pasteurellosis. In this, 3,200 poultry were clinically examined.

It has become known that the epizootic situation in diseases that manifest clinical signs and pathological anatomical changes characteristic of poultry pasteurellosis is becoming more complicated from year to year. The results of the investigation of the epizootic situation of poultry pasteurellosis in some districts of the Kashkadarya region and the data obtained are presented in Table 1 below. As can be seen from the table, the occurrence of poultry pasteurellosis was detected in some of the inspected farms, which causes significant economic damage to the national economy. It was found that the disease occurs in all seasons of the year, but it is more common in spring and summer than in winter and autumn.

Table 1 Determining the epizootic status of poultry pasteurellosis in farms of the Shahrisabz district of the Kashkadarya region.

№	Names of villages surveyed	Seasons				Total
		Winter	Spring	Summer	Autumn	
1	Jarbashi village	4	7	8	5	24
2	Shamaton village	4	8	8	6	26
3	Istiqbol village	5	7	9	5	26
4	Xujaxuroson village	6	8	10	6	30
5	Boyg‘undi village	7	9	11	8	35
6	Rovot village	5	10	12	7	34
7	Qo‘shqanot village	6	8	10	5	29
8	Shahrisabz city Keshagrovet Pharm parranda” MChJ	8	13	15	9	45
Total :		45	70	83	51	249
%		18,1	28,1	33,3	20,5	100

It was found that poultry cases of pasteurellosis are recorded annually in the farms listed in the table. It was found that the disease in poultry mainly occurs in acute and subacute forms, with clear clinical signs.

Summarizing the information obtained as a result of the inspections, it was found that poultry pasteurellosis occurs in a number of district farms in the Samarkand and Kashkadarya regions and is likely to increase further, and veterinarians working in the areas were informed that this disease should be the focus of attention of veterinary specialists.

In order to master the primary diagnosis of pasteurellosis in poultry, clinical signs, and pathoanatomical changes, observation, study, and analysis of clinical signs, pathoanatomical changes, and disease progression in 350 (three hundred and fifty) head of poultry in farms where these diseases were registered were carried out. As a result of the observations and examinations conducted, the following was determined: it was determined that mainly poultry older than 1-2 years of age become ill and die from pasteurellosis. Although there is no strict seasonality in the disease, it was found that it occurs more often in the summer months.

The source of the disease is sick birds, the natural reservoir and mechanism of transmission of the pathogen is the soil, where it is actively stored for a long time. Studies have shown that the incubation period of pasteurellosis lasts from 24 hours to 9 days, and there is a hyperacute, acute, subacute and chronic course. Depending on the virulence of Pasteurella multocida, the incubation period of pasteurellosis in birds is observed to be from several hours to 2-4 days. In them, the disease is often acute. The general condition of sick birds is characterized by lethargy, drooping wings, ruffled feathers, closed eyes, and a bluish-black crown. Sick birds are often observed to hide their heads under their wings or lie on their backs. Body temperature of sick birds is 43^0C and above, anorexia and thirst are noted. A bubbly mucous discharge was observed from the nostrils and beak. Some birds showed signs of diarrhea and rhinitis. In chickens, blueness of the crown and wattles, labored breathing, wheezing, and twitching were observed. In acute cases, birds suddenly fell, flapped their wings several times, and died without clinical signs.

During the research, the birds that died from pasteurellosis were pathologically dissected. The dead birds had hemorrhagic diathesis (hemorrhage and inflammation of the mucous and serous membranes in the internal organs, especially in the epicardium of the heart), the liver, kidneys and spleen were slightly swollen, dark red, and serous-fibrinous infiltrates were observed in the subcutaneous tissues, especially in the edematous form of the disease, in various parts of the body. Pulmonary edema is a characteristic change of the initial stage of croupous pneumonia. In the intestinal form, fibrinous-hemorrhagic inflammation was observed in the stomach and intestines. The bodies were emaciated and bloodless, red and with numerous blood clots, and there were foci of necrosis in the lungs. The spleen was slightly enlarged, and small foci of necrosis were observed in the liver and kidneys.

In order to make a precise diagnosis, samples were taken from them for bacteriological examination and brought to the laboratory for examination. The results of bacteriological examination of pathological materials from poultry that died in the Shahrisabz district and Shahrisabz city of Kashkadarya region are presented in Table 2 below. The table shows that the pathogen of pasteurellosis was isolated from pathological samples taken from dead poultry belonging to the population in the villages of Baygundi and Koshkanot of the Shahrisabz district of Kashkadarya region. Salmonellosis was found in poultry belonging to the population in the village of Rovot of the district, and Salmonellosis and colibacteriosis were found in a mixed form in the villages of Shamaton and Khujakhurason. Streptococcus was isolated from dead poultry in the villages of Jarboshi and Istiqbol. During bacteriological examination of poultry that died of illness at the Keshagrovet Pharm poultry limited liability company in the city of Shahrisabz, the causative agent of colibacillosis, E. Coli, was isolated from them.

When the prepared smears were examined under the microscope's x90 objective, in the immersion system, it was found that the field of view of the microscope contained gram-negative small short rods, their ends were curved, round, some were elongated, thickly ellipsoidal, and they were located in separate pairs. In the smears prepared from pathological materials, it was found that the pasteurellae were wider than the others. It was found that the size and shape of the pasteurellae varied depending on the origin of the strain.

Table 2. Results of bacteriological examination of pathological materials from poultry that died of disease in the Shahrisabz district and the city of Shahrisabz in the Kashkadarya region.

№	Farm name	A pathological specimen		Name and number of nutrient medium		Name of the isolated pathogen, conditional symbol
		Nomi	Soni	meat peptone broth	meat peptone agar	
1.	Jarbashi village	Lungs, heart, liver, bones	7	56 ta	56 ta	Streptokokk
2.	Shamaton village	Lungs, heart, liver, bones	8	64 ta	64 ta	Salmonella + E.Coli
3.	Istiqbol village	Lungs, heart, liver, bones	8	64 ta	64 ta	Streptokokk
4.	Xujaxuroson village	Lungs, heart, liver, bones	7	56 ta	56ta	Salmonella + E.Coli
5.	Boyg‘undi village	Lungs, heart, liver, bones	12	96 ta	96 ta	Pasterella multosida
6.	Rovot village	Lungs, heart, liver, bones	9	72 ta	72 ta	Salmonella
7.	Qo‘shqanot village	Lungs, heart, liver, bones	9	72 ta	72 ta	Pasterella multosida
8.	Shahrisabz city Keshagrovet Pharm parranda” MChJ	Lungs, heart, liver, bones	8	64 ta	64 ta	E.Coli
JAMI:			68	544	544	

We believe that this situation is often related to the type of poultry, the nutritional environment, re-inoculations and other factors. In smears prepared from cultures grown in meat peptone broth, the pathogens were found to have a polymorphic appearance.

In smears prepared from meat peptone broth nutrient media, the pathogen was found to consist of one or two cocci or short rod-shaped bacteria, sometimes arranged in short chains.

According to the results of the studies, it was found that P. multocida uniformly projects the meat peptone broth nutrient medium, forms a fluffy, whitish precipitate, and when shaken lightly, the precipitate rises in the form of a hairpin (S-form), mucoid strains grow intensively and form a thick mucus precipitate (M-form), and R-form strains do not project the medium and form a fine-grained precipitate.

Conclusions

1. An epizootic situation of pasteurellosis was identified in poultry farms in some districts of the Kashkadarya region.
2. Five local epizootic strains of pathogens were isolated from poultry farms with poor health.
3. Experimental pasteurellosis was induced in poultry and its specific clinical signs and pathological anatomical changes were identified.
4. Methods for preliminary and final diagnosis of poultry pasteurellosis were mastered.

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