

RESEARCH ON THE PRESENCE OF VIRAL INFECTIONS IN DOGS IN DOG SHELTERS FROM EASTERN ROMANIA (BOTOSANI, IASI AND VASLUI COUNTIES)

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Abstract

The present study aimed to investigate the presence of viral infections in dogs in paddocks in eastern Romania (Botoșani, Iasi and Vaslui counties). The research was focused on the analysis of diagnostic methods used in paddocks to identify infectious agents, the analysis of predisposing factors, as well as the analysis of measures to monitor and combat infections in the shelter. Most cases of viral diseases (5,000) were observed in the case of a shelter in Iasi County. Canine parvovirus was the most common viral disease among dogs in the three counties included in the study, the incidence of this disease ranging between 28.18% and 100%. Cases of Carre's disease, infectious hepatitis and kennel cough were also diagnosed in the paddocks included in the study, but their incidence was significantly lower. Among the main recommendations for preventing canine parvovirus infection are avoiding contact between sick and healthy animals, as well as avoiding frequenting of contaminated areas by their young pathways. In the case of the dog shelter located in Botoșani, the impossibility of ensuring a proper quarantine before introducing the puppies into the shelter, led to a mortality of 87.91% among the youth. The present results suggest that there were outbreaks of canine parvovirus in the shelters included in this study, with CPV being the primary pathogen in all three shelters. Due to the significant losses caused by viruses and the high costs of treating sick animals, there is a need for early diagnosis and the application of well-defined immunoprophylaxis measures in shelters. This study reinforces the importance of immunization to ensure the welfare of dogs in public and private shelters.

Key words: viral disease; dog shelters; parvovirus; immunoprophylaxis

INTRODUCTION

In recent years, efforts have been made to better understand the health of animal populations, especially with regard to viral infections. Due to the high mutation rate and replication strategies, viruses are responsible for recently recognized emerging diseases, which pose a danger not only to domestic and wild animals but also to humans (Cleaveland, 2009; Parrish et al., 2008). The high density of domestic and stray animals in urban areas allows the spread and viral maintenance in these populations. Of the major viral diseases that affect the canine body, most have a high mortality rate. Among the most serious viral diseases of the canine organism, which can occur with a series of complications difficult to manage, are parvoviruses, Carre's disease, coronavirus, rabies, kennel cough, and viral canine hepatitis.

The shelter may become a favorable environment for the spread of viral diseases and their effective management can often be difficult. The present study aimed to investigate the

presence of viral infections in dogs in paddocks in eastern Romania (Botoșani, Iasi, and Vaslui counties). The research also focused on the analysis of diagnostic methods used in shelters to identify infectious agents, the analysis of predisposing factors, as well as the analysis of measures to monitor and control infections.

MATERIAL AND METHOD

The ANSVSA database and the website www.registru-caini.ro were accessed, in order to obtain the necessary information regarding the location and contact data of the paddocks in Iași, Botoșani and Vaslui counties. According to the information presented on the two sites, in Iași county there are three public shelters, in Iași, Balciu (Miroslava commune) and Cristești (Cristești commune), in Botoșani county there are 2 public shelters, in Botoșani and Flamânzi localities and a private one (Botoșani), and in Vaslui county, there are a number of 5 shelters, of which 3 public, in the localities of Vaslui, Bârlad and Huși, respectively 2 private in the localities of Bârlad and Bălteni. A formal request for detailed information regarding the number of animals in the shelter in 2019 and in

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the first trimester of 2020, the demographic characteristics of the animals in the shelter, the presence of viral infectious diseases during the analyzed period, the therapy and treatment schemes implemented, as well as the measures prophylaxis of these diseases was submitted to the aforementioned dog shelters.

Following the request sent to the dog shelters located in Iași, Botoșani, and Vaslui counties, detailed information was obtained from a public dog shelter located in Iași and two private ones located in Botoșani, Vaslui county.

Statistical analysis was performed with spss statistical software. The incidence of the disease was defined as the number of new cases occurring in the analyzed unit of time. The mortality rate was calculated to measure viral deaths, which occurred in a population of dogs, in a specific period of time (2019, first trimester of 2020).

RESULTS AND DISCUSSIONS

In the three shelters included in the study, the number of female animals population was significantly larger (< 0.05) compared to the male population in both adult and young dogs. Additionally, the proportion of animals aged 0-5 years was significantly higher.

Canine parvovirus was the most common viral disease among dogs in the three counties included in the study, the incidence of this disease ranging between 28.18% and 100%. Cases of Carre's disease, infectious hepatitis and kennel cough were also diagnosed in the shelters included in the study, but their incidence was significantly lower.

Cases of canine infectious hepatitis were recorded only in the public shelter located in Iasi county.

Among the main recommendations for preventing canine parvovirus infection are avoiding contact between sick and healthy animals, as well as avoiding frequenting of contaminated areas by their young pathways. In the case of the dog shelter located in Botoșani, the impossibility of ensuring a proper quarantine before introducing the puppies into the shelter, led to a mortality of 87.91% among the youth, 70% of deaths being recorded in the first 48 hours after the onset of the disease.

In the case of dogs from the shelter located in Iași, the diagnosis of viral diseases was established exclusively on the basis of medical history, clinical signs of illness, and physical examination., while in the other two shelters immunochromatography-based test were used for the diagnosis of parvovirus.

The diagnosis of kennel cough usually requires the isolation and identification of viruses or identification of the level of post-infection antiviral antibodies. However, in the case of the three shelters included in the study, the allocated financial resources did not permit further investigation apart from clinical examination. The diagnosis was established based on the signs of respiratory infectious such as persistent, paroxysmal and forced cough, which in some cases was accompanied by other symptoms such as sneezing or excessive discharge from the eye or nose.

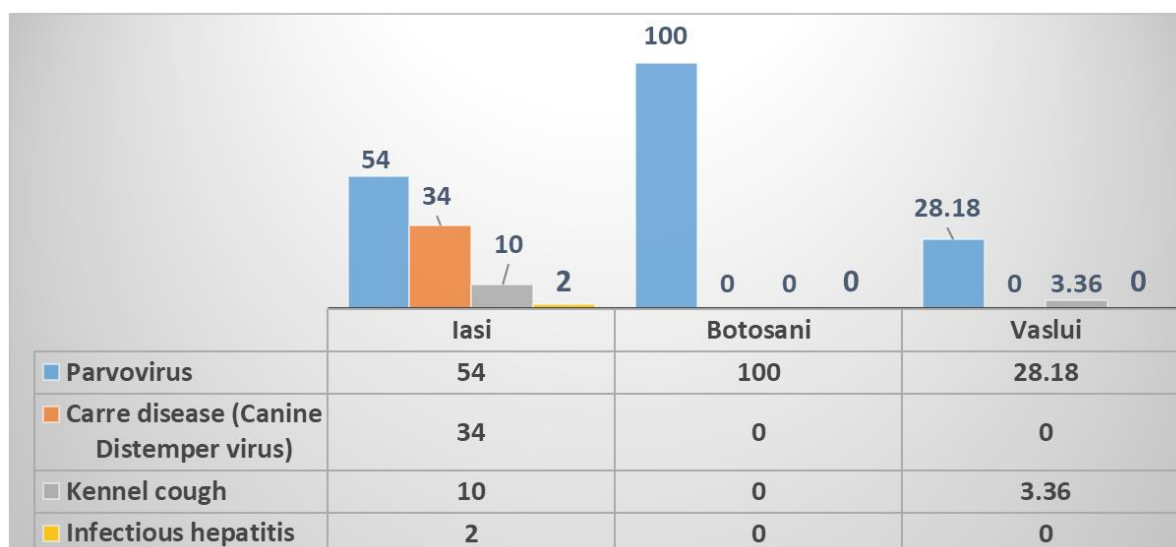


Figure 1. Incidence of different viral disease (%) in dog shelters from eastern Romania (Iasi, Botosani and Vaslui counties) in 2019

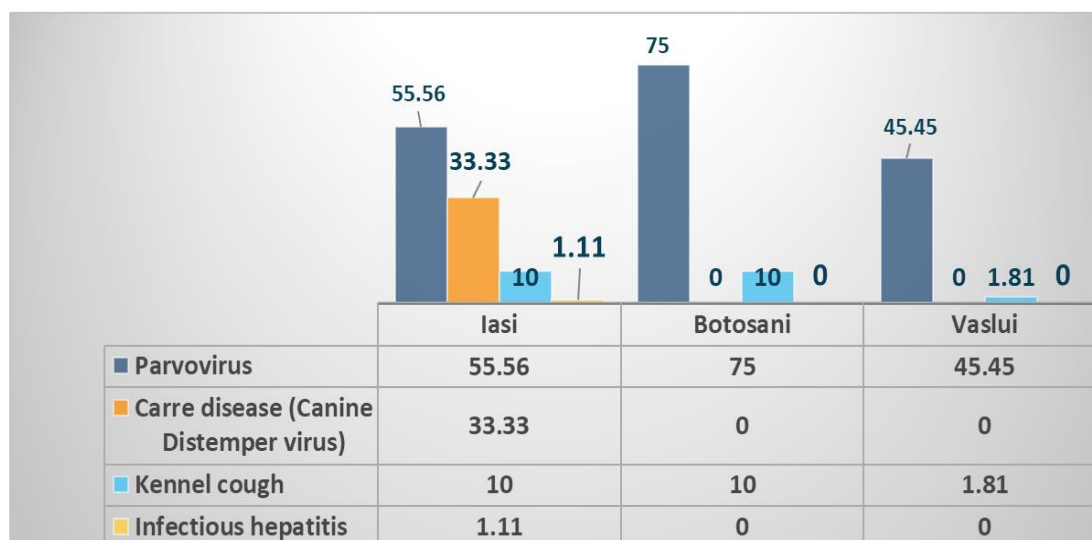


Figure 2. Incidence of different viral disease (%) in dog shelters from eastern Romania (Iasi, Botosani and Vaslui counties) in 2020 (first trimester)

CONCLUSIONS

1. The present results suggest that there were outbreaks of canine parvovirus in the shelters included in this study, with CPV being the primary pathogen in all three shelters.
2. Due to the significant losses caused by viruses and the high costs of treating sick animals, there is a need for early diagnosis and the application of well-defined immunoprophylaxis measures in shelters.
3. This study reinforces the importance of immunization to ensure the welfare of dogs in public and private shelters.

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