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### **STUDY OF PATHOLOGY MORPHOLOGICAL CHANGES IN BABESIOS OF CARNIVORES**

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**Introduction.** Recently, there has been a trend of growth of blood-parasitic diseases among small non-productive animals, as well as expansion of the range of the vector, intermediate hosts and the causative agents of parasitic diseases. At the same time, not only carnivores can serve as a reservoir of the causative agent, but also tick populations themselves, in which the causative agent is stored due to transavarial and transfaral transmission. The share of such animals among homeless dogs and cats is especially high.

Many scientists are engaged in the study of babesiosis, examining various aspects of this disease in different forms of the clinical course. However, changes in hematological indicators, in particular a significant decrease in the number of platelets in the blood, as well as hemosiderosis of the liver, have not been studied yet.

The board of authors notes that hematological changes in the blood of cats with babesiosis usually manifest as regenerative hemolytic anemia in combination with poikilocytosis, polychromasia, anisocytosis, and thrombocytopenia [1]. The mechanism of thrombocytopenia has not been finally clarified. One of the possible explanations is sequestration of platelets in the spleen or immune-mediated destruction of platelets and the development of disseminated intravascular coagulopathy [2]. Biochemical changes mainly include elevated liver and kidney parameters, and sometimes elevated pancreatic enzymes and hypoglycemia. [3]. The results of hematological and biochemical studies show that in dogs with a severe form of babesiosis, erythropenia, a decrease in the level of hemoglobin, hematocrit, platelets, leukocytosis, an increase in the blood concentration of bilirubin (3.25 times), urea (1.55), creatinine (1.23), a decrease in glucose content (by 1550%). With medium and mild severity of the disease, the above hematological and biochemical changes in dogs are less pronounced. [4, 5].

**Materials and methods.** The task of our research was to investigate the nosological aspects and pathomorphological changes of the morphological manifestation, diagnostic comparative changes of blood parameters, as well as some pathohistological aspects of the liver in babesiosis (piroplasmiasis) of carnivores (dogs and cats) in the city of Vinnytsia.

Research was carried out on the basis of the private hospital of veterinary medicine "VinVet" in the city of Vinnytsia, Vinnytsia region and at the Department of Normal and Pathological Morphology and Physiology of the Faculty of Veterinary Medicine and Animal Husbandry Technologies of the Higher educational institution «Podillia State University».

Nosological aspects (based on animal registration data), physiological, clinical and pathomorphological parameters are taken into account in the data analysis. Along with the general methods of researching the animal's condition (biochemical blood analysis, general blood analysis), histological research methods were applied.

The object of the study were dogs and cats of various breeds that were admitted to the hospital in 2023. The experiment involved dogs and cats aged from 2 to 3 years, of different breeds, age groups, in different physiological states, in the amount of 20 heads of each species ( $n = 20$ ), in which a diagnosis was previously established in the anamnesis and clinical picture babesiosis.

The materials for the work were the results of a clinical examination of animals admitted to the hospital and their treatment, data from a morphological examination of the blood of sick animals, and histological examinations of the liver and kidneys of deceased animals. When making a diagnosis of babesiosis, microscopy of peripheral blood smears was performed. In addition to the general methods of studying the condition of the animal, histological research methods were used.

**Results.** The results of a biochemical blood test were within the physiological norm with small changes in the composition of peripheral blood, which indicates local pathological changes in the circulatory system.

When analyzing the results of a general clinical hematological analysis, a decrease in the content of erythrocytes, platelets, hemoglobin and the number of leukocytes was noted. At the same time, the quality indicator of leukocytes in dogs decreased by 30.6% on average, and in cats this indicator decreased by 24.7%, respectively. The decrease in the number of erythrocytes is most likely related to the development of babesia in them, and amounted to 27.9% in dogs and 18.6% in cats, respectively.

Changes in the level of hemoglobin, erythrocytes and lymphocytes in blood indicators are evidence of anemic syndrome. Such results indicate morphological changes and dysfunction of all organs and systems.

Anisocytosis and poikilocytosis were observed in blood smears, in the field of view of the microscope, which indicates the functional insufficiency of hematopoietic organs in various anemias and is a consequence of the disease.

Analysis of the histosection showed a changed structure of some liver lobes, as well as a significant amount of bilirubin in hepatocytes. Single focal necrosis of hepatocytes with discomplexation of liver tissue and disruption of beams, pronounced hemosiderosis were observed.

**Discussion.** Research results have shown that a preliminary clinical diagnosis of babesiosis in carnivores can be made on the basis of blood smear examination in combination with medical history, hemato-biochemical, post-mortem and histopathological changes. The obtained results of pathohistological studies are important for scientists both theoretically and practically, so further scientific research will be aimed at studying more detailed histomorphological aspects of the early stages of the pathological process.

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#### THE IMPACT OF GnRH AGONIST ON SPERMATOGONIAL STEM CELLS IN MALE DOGS

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**Introduction and aim.** Gonadotropin-releasing hormone agonist slow-release implants (GnRH SRI) are widely used in veterinary practice as an alternative to surgical castration. These implants, such as buserelin and deslorelin, effectively suppress male testicular, endocrine, and germinative functions. Beyond medical applications like treating benign prostatic hyperplasia