A Global View to Parvoviral Enteritis

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Abstract
Parvoviral enteritis caused by parvovirus is an important disease of the puppies, especially in the early stages of their lives. Most adult dogs are immune to the disease, either via natural infection or immunization. Subclinical infections characterized by seroconversion without evidence of clinical disease, are common in the unvaccinated adult. Infection is a disease characterized by hemorrhagic gastroenteritis and/or myocarditis, with high morbidity and mortality. The aim of this review is to draw attention to this disease, which often causes death in small puppies.

Keywords: Canine; Parvovirus; Enteritis; Symptoms; Treatment

Introduction
The most important cause of canine viral enteritis is CPV, which emerged as a clinical problem in 1978. Parvoviruses (Paroviridae) are small, non-enveloped, single-stranded DNA viruses that replicate in actively dividing cells. These viruses are hardy, persisting for long periods of time in the environment (5-7 months), and are ubiquitous [1].

Canine Parvovirus type-1 (CPV1) has not been identified as a pathogen for a long time and has been shown to cause diarrhea [2]. Canine Parvovirus 2 (CPV-2) believed to have emerged from Feline Panleukopenia Virus (FPV) or from a parvovirus of another wildlife species was the first variant of this virus associated with the development of hemorrhagic diarrhea. Between 1979 and 1985, CPV-2 was largely replaced by 2 more virulent strains of parvovirus, CPV-2a and CPV-2b. More than 80% of the isolated cases of CPV in the United States today are CPV-2b [1,3].

It has been reported that virus excretion, which begins 3-4 days after entering the virus organism, lasts for 1-2 weeks and in experimental studies it is reported that virus fecal spread begins at 3 days after inoculation [4]. Parvoviral enteritis, anaerobic bacteria normally found in the intestinal flora, can lead to sepsis by passing through the damaged intestinal mucosa into the bloodstream. In particular, Salmonella, Clostridium, E. coli and Campylobacter have been reported to cause endotoxemia sepsicaemia and death [2]. It has been determined that disturbances in the end-stage renal function of the sepsis result in intestinal nephritis and acute tubular necrosis as a result of these deterioration [5]. Other common symptoms are myocarditis in the heart and pneumonia in the lungs [2]. Subclinical infections are frequently detected in offspring and adult dogs with moderate maternal antigens [6].

In the case of parvoviral enteritis, the evaluation of the hemogram as much as the anamnesis is of great importance. [3,7]. Leukopenia has been implicated in the destruction of hematopoietic stem cells in the bone marrow of leukocytes as well as the inability of lymphoproliferative organs such as the thymus, lymph nodes and spleen to respond to the inflammatory need for neutrophils in the digestive tract [1]. It was reported that dogs with CPV enteritis have a high prevalence of clinical thrombosis or phlebitis and laboratory evidence of hypercoagulability without disseminated intravascular coagulopathy. Thromboelastography may help identify hypercoagulable states in dogs [5]. Clinically, antibody-based methods and tests that detect viral antigens are available methods for diagnosing the disease [6,8].

The most important part of the treatment should be aimed at eliminating the dehydration and eliminating the missing fluid and electrolytes, thereby restoring acid-base balance [1,9]. The use of antiemetics in the treatment of parvoviral enteritis has been suggested to be an indication of the use of antiemetics in treatment of the parvoviral enteritis dogs [10]. Antibiotic use in the treatment of the disease may result in bloody diarrhea or high fever in the dog, intestinal barrier deterioration and intravenous, broad spectrum, bactericidal the use of antibiotics is recommended [1,11]. Albumin supplementation studies on animals are inadequate and the use of plasma transfusions for this purpose is not recommended. More recently, immunotherapy methods have become more important in the treatment of parvoviral enteritis puppies [3,8]. A recent veterinary review article recommended plasma infusion to raise the plasma albumin to 2.0 g/dL to 2.5 g/dL, and the preferential administration of non-protein, synthetic colloids to maintain the plasma COP between 13 mm Hg and 20 mm Hg. However, a large volume of plasma is required to achieve a small increase in plasma albumin (22.5 mL/kg plasma will raise plasma albumin by 0.5 g/dL) [1].

The aim of this review was to draw attention to the parvoviral enteritis table, which has significant morbidity and mortality rates especially in young offspring or immunocompromised dogs. We hope that this compilation will contribute to all scientists, especially clinical or general practitioner veterinarians.

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References