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Successful treatment of canine parvoviral infection with imunoglobulins in a pup

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Abstract
Canine parvoviral infection is caused by canine parvovirus type 2 (CPV 2) belonging to genus Canine parvovirus and Family Parvoviridae, which is one of the most dreadful diseases affecting the canine population. It causes severe haemorrhagic gastroenteritis in adult dogs and myocarditits in puppies with high morbidity and mortality rate. Early diagnosis based on immunization against canine parvo virus and obvious clinical signs. Clinicians encountered in rescuing the puppy mortality in severe cases, if failed to treat with adequate fluids and supportive therapy. In this case report the canine parvovirus affected pup was with purified immunoglobulins against parvovirosis (along with essential recommended antibiotic, antacids, antiemetic and supportive therapy with adequate intravenous fluids and eventually the pup was recovered from the clinical infection. The study confirmed that incorporating specific immunoglobulins in severe epidemic of parvo viral enteritis will prevent mortality and quick clinical recovery.

Keywords: canine parvo viral infection, haematology, FAT, immunoglobulins

Introduction
Canine parvovirus (CPV) is a small, non-enveloped, and single stranded DNA virus, which replicates in rapidly dividing cells notably intestinal crypts, lymphoid tissues, thymus and bone marrow (Crawford and Sellon, 2010; Dudley and Johnny 2006) [2, 3]. Amongst the viral etiologies responsible for gastroenteritis in dogs, canine parvovirus (CPV) is considered as the most pathogenic.CPV-2 spreads rapidly among dogs via faecal route or through oronasal exposure to fomites contaminated with infective faeces. Acute CPV-2 enteritis can be seen in dogs of any breed, age, or sex, but puppies between 6 weeks and 6 months are more susceptible (Pollock and Coyne., 1993) [6]. It is highly resistant to detergents and disinfectants, and survives in the environment for several months (Crawford and Sellon, 2010; Dudley and Johnny 2006; Prittie, 2004) [2, 3, 7] Acute enteritis due to CPV is most often seen in young pups, aged 6 weeks to 6 months. Enteritis is the most common clinical syndrome of CPV infection. Clinical signs often include anorexia, abdominal pain, frequent vomiting, diarrhea, often bloody, and consequently severe dehydration and potentially hypovolumic shock may be present (Crawford and Sellon, 2010; Dudley and Johnny 2006; Prittie, 2004; Carmichael, 2005) [2, 3, 7, 1]. Lymphopenia and neutropenia are common, although leucopenia, often considered a hallmark of CPV infection, might occur in less than 50% of the dogs at presentation (Kramer et al., 1980) [4]. The result of this case study will benefit veterinarians by providing a new option for CPV therapy, because CVP is the most frequent fatal and highly infectious in dogs.

Case history & Observation
A 3 months old, 7 kg weight, male German Shepherd was presented to the Infectious Disease Ward, Teaching Veterinary Clinical Complex, Veterinary College and Research Institute (VC&RI), Namakkal with a history of persistent bloody diarrhea (Fig.1&2) with vomiting. The puppy was a part of 4 puppies - litters born to a vaccinated bitch. On general examination, the pup showed pyrexia, dull, depression and dehydration. Faecal and blood samples were collected for investigation. Based on history and clinical observation the pup was treated symptomatically. The faecal sample was processed in the Disease Investigation Laboratory, Department of Veterinary Preventive Medicine, VC & RI, Namakkal and found positive for canine parvo virus by haemagglutination (HA) test by using 0.5% porcine erythrocytes) was performed as previously described by Senda et al., (1986) [8] and direct fluorescent antibody test (FAT) using Fluorescent Isothiocyanate conjugate for CPV (Veterinary Medical Research and Development, USA). Blood picture showed lower PCV (35%), Haemoglobin (8 g/dl), RBC ($4.4x10^6$/ml) and elevated lymphocytes (44%).

Treatment & Discussion

Based on the nature and severity of condition, the pup was treated with purified immunoglobulins against parvovirosis (Immunoglobulin anti parvovirosis canis NLT 1024 HIU – *Canglob- P*®)* at the dose of 0.4 ml/Kg body weight intravenously for 5 days along with antibiotic (Amoxicillin – Cloxacillin@10 mg/Kg bw), antihistamine (Ranitidine@0.2 mg/Kg bw), antiemetic (Ondensetrone@0.1 mg/Kg bw) and fluid therapy of Ringers lactate and 5% Dextrose Normal saline@10 ml/Kg bw. The treated pup made an uneventful recovery on 5th day of treatment. A blood sample was collected again and analyzed for blood parameters which showed the normal haematological values. The administration of specific immunoglobulins during clinical phase of parvo viral enteritis will prevent mortality and resulting in quick recovery in this case findings is correlated with Nguyen *et al.,* (2006) [5] and Saurtini *et al.,* (2014) who administered yolk-derived immunoglobulins IgY intravenously in dogs of severe clinical course of experimental CPV-2 infection and found that recovery from illness and better weight gain. Suartini and Sendow (2015) [10] opined the advantages using immunoglobulin Y (IgY) specific antibodies isolated from chicken egg yolk and Immunoglobulin Y will neutralize the virus, so it cannot infect host cells. Intravenous IgY therapy has shown to suppress the spread of CPV infection and prevent death. It is concluded the inclusion of specific immunoglobulin against canine parvo virus in the treatment regimen during initial stages of severe infection will ensure the favourable recovery and prevent the mortality.

Fig 1: parvo viral infected pup

Fig 2: Bloody diarrhea and purified immunoglobulins (Canglob-P®) vial

References

1. Carmichael LE. An Annotated Historical Account of Canine Parvovirus. J Vet. Med 2005;52:303-311.
2. Crawford PC, Sellon RK. Canine viral diseases. In: Ettinger SJ, Feldman EC. (Eds.): Textbook of Veterinary Internal Medicine, 7th edition. Elsevier-Saunders. St. Louis, Missouri 2010, 958-971.
3. Dudley LM, Johnny DH. Canine viral enteritis. In: Greene, C.E. (Ed.): Infectious Diseases of the Dog and Cat. 3rd edition. Elsevier-Saunders, St. Louis, Missouri 2006, 63-70,
4. Kramer JM, Meunier PC, Pollock RVH. Canine parvovirus: update. Vet. Med. Small Anim. Clin 1980;75:1541-1555.
5. Nguyen SV, Umeda K, Yokoyama H, Tohya Y, Kodama Y. Passive protection of dogs against clinical disease due to Canine parvovirus-2 by specific antibody from chicken egg yolk. The Can. J of Vet. Res 2006;70:62-64.
6. Pollock RVH and MJ Coyne. Canine parvovirus. Veterinary Clinics of North America: Small Anim Prac 1993;23:555-568.
7. Prittie J. Canine parvoviral enteritis: A review of diagnosis, management, and prevention. J. Vet. Emerg. Crit. Care 2004;14:167-176.
8. Senda M, Hirayama N, Yamamoto H, Kurata K. An improved haemagglutination for study of canine parvovirus. Vet. Microbio 1986;12:1-6.
9. Suartini GAA, Suprayogi A, Wibawan WT, Sendow I, Mahardika GN. Intravenous administration of chicken immunoglobulin has a curative effect in experimental infection of canine parvovirus. Global Veterinaria 2014;13(5):801-808.
10. Suartini GAA, Sendow I. Prospek Pemanfaatan Imunoglobulin Y untuk Terapi Infeksi Canine Parvovirus pada Anjing. WARTAZOA 2015;25N(2):55-64.