



Short Communication

Canine Parvo Viral Infection in Dogs and Their Treatment

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ABSTRACT

Canine parvovirus (CPV) is a very contagious and potentially fatal viral disease seen in dogs. In the present study signs exhibited by the 72 CPV infected dogs were recorded. Dogs were identified suffering with CPV infection with Scan Vet™ Parvo kit. All the dogs exhibited the clinical signs such as vomitions and diarrhoea, elevated mean rectal temperature, heart rate and respiratory rate. Among the 72 dogs treatment was given to the 27 CPV infected dogs with Inj. Cefotaxime dosed at 25mg/kg body weight once/day, intra venous for 5days, Inj. Metaclopramide dosed at 0.2mg/kg body weight once/day, intra venous for 3 days, Inj. Ranitidine dosed at 0.5mg/kg body weight, intra venous once/day for 3 days, 5% Dextrose and Ringers Lactate based on the dehydration status of the individual dog. Among the 27 CPV infected dogs 24 were successfully treated.

Key words: Canine parvo viral infection, Dogs, Signs, Tirupathi, Treatment

INTRODUCTION

Among the various gastrointestinal disturbances, enteritis is the most common clinical condition encountered in all breeds and age groups of canine population (Bhat *et al.*, 2013). 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). Factors that predispose puppies to parvoviral infection include lack of protective immunity, intestinal parasites, overcrowding, unhygienic and stressful environmental conditions. Canine parvovirus 2 (CPV-2) remains a significant worldwide canine pathogen and the most common cause of viral enteritis in this species. The virus is known to cause myocarditis in young puppies and hemorrhagic gastroenteritis in older animals. Gastroenteritis of viral origin has emerged as a major cause of morbidity and mortality in dogs. Parvovirus is capable of causing two different sets of clinical problems. The first to be recognized, and most common, is the “intestinal” form, which is manifested by diarrhea; often bloody vomiting, loss of appetite, depression, fever, and

sometimes death. The second syndrome, the “cardiac” form, occurs in very young pups and is manifested by an acute inflammation of the heart muscle (Panda *et al.*, 2009). However, infection with Parvovirus does not automatically mean illness. Several factors such as age, environment, stress, parasites and general health status of each individual dog infected could affect the severity of illness. The degree of illness could range from very mild to unapparent to very severe, often resulting in death. The disease is usually more severe in young dogs (less than 6 months of age) or old dogs (Sutton *et al.*, 2013). Present communication reports the canine parvo viral infection in dogs along with their clinical manifestations and management in Andhra Pradesh of India.

MATERIALS AND METHODS

Dogs with the history of vomitions and diarrhoea were screened for the CPV infection by using the Scan Vet™ PARVO kit in Teaching Veterinary Clinical Complex, College of Veterinary Science, Tirupati. The faecal samples were collected from the suspected dogs with help of sterile swab by inserting in to rectum and collected the faecal samples to test with Scan Vet™ Parvo kit as per the manufacturer’s instructions. After confirmation of the disease, clinical examination was done to collect the detailed history of the case, clinical

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parameters such as rectal temperature, respiratory rate and heart rate, color of conjunctival mucus membrane, nature of diarrhoea and the degree of dehydration. The general symptoms of parvovirus are lethargy, severe vomiting, loss of appetite and bloody, foul-smelling diarrhea and dehydration.

The therapeutic agents used in the present study were Taxim (Cefotaxime, Alkem laboratories LTD Himachal Pradesh) dosed at 25mg/kg body weight, Perinorm (Each ml contains 5mg of metoclopramide, IPCA Laboratories Limited), Rantac (Each ml contains 50mg of Ranitidine, JB chemicals Laboratories Limited), Dextrose 5% (Fresenius Kabi Limited), Ringers Lactate (Claris Life Sciences Limited, containing 131mmol/L Sodium, 5mmol/L Potassium, 111mmol/L Chloride, 2mmol/L Calcium and 29mmol/L Bicarbonate as Lactate) 500 ml Intra venous administration. All 72 CPV positive dogs were treated on day one but out of which 27 dogs were treated for 5 days and remaining 45 dogs were not brought to clinic for the treatment (discontinued). The treatment was carried out with Inj. Cefotaxime dosed at 25mg/kg body weight once/day, I/V for 5days, Inj. Perinorm (Metaclopramide) dosed at 0.2mg/kg body weight once/day for 3days, I/V, Inj. Rantac (Ranitidine) dosed at 0.5 mg/kg body weight, I/V once/day for 3 days.

Fluid therapy was initiated with 72 dehydrated dogs were administered with Inj.5% Dextrose and Inj. Ringers Lactate (R.L). Dose of the fluids calculated based on severity and percentage of dehydration the amount was decided and administered for example, if a dog weighing 10 kg was showing 10% dehydration then the amount of fluid required for replacement of the fluid deficient was approximately 1000ml. This was calculated by formula: Body weight (Kg) \times percentage dehydration = fluid deficit (liters). The total amount was administered in two divided doses: i.e. 250ml DNS and 250ml R.L in the morning then repeat the same amount in the evening.

RESULTS AND DISCUSSION

A total of 217 faecal samples were screened for CPV infection, 72 were conformed for CPV by Scan Vet™ Parvo test kit. Further, all the 72 dogs had characteristic symptoms, hence all these dogs were considered as clinical cases of canine parvovirus infection. Dogs had a significant elevated mean rectal temperature $40.68 \pm 0.30^\circ\text{C}$, heart rate $198.88 \pm 3.2/\text{min}$ and respiratory rate $45.94 \pm 3.44/\text{min}$ when compared to healthy dogs. All the 72 (100%) CPV infected dogs had diarrhea (Fig. 1), variations in the colour of stools (Fig. 2) and anorexia, whereas 69 dogs (95.83%) had vomitions, 33 (45.8%) dogs had moderate dehydration, 39 (54.1%) dogs had severe dehydration, 52 (72.22%) dogs had pale buccal mucus membrane and 18 dogs had watery nasal discharges (Fig. 3). The parvovirus infected dogs exhibited different combinations of above clinical signs. Out of 72 dogs with Parvoviral diarrhoea 32 (44.4%) dogs had bloody diarrhoea, 22 (30.55%) had dark tarry coloured foul smelling diarrhoea, 7 (9.7%) had yellowish foul smelling faeces and 11 (15.27%) had mucous coated with streaks of blood and 4 (5.55%) had blood tinged diarrhoea. The diarrhoea was watery in consistency and the frequency of diarrhoea varied from 3 to 10 times in a



Fig. 1: CPV infected dog showing the severe hemorrhagic enteritis.

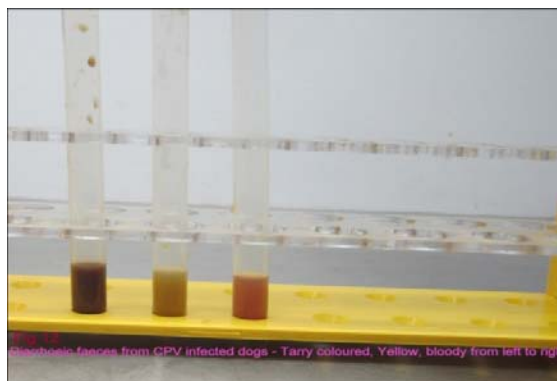


Fig. 2: CPV infected dogs showing the variation in the colour of stools.



Fig. 3: CPV infected dog showing the pale buccal mucus membranes.

day. Further the bloody diarrhoea, dehydration, depression was recorded in more number (23) of dogs with mixed infection compared to do with solo infection.

In the present study 27 dogs were treated out of which 3 dogs were died on 4th day of treatment and remaining 24 dogs showed response to therapy and recovered. Out of these 24 dogs 22 dogs were found to be severely dehydrated and infected with secondary bacterial infection which took 72 hrs for the clinical recovery and temperature, pulse, respiration slowly returned to nearly normal and remaining 5 dogs were infected with solo infection which were recovered with in 48 hrs.

In the present study CPV infected dogs were exhibited clinical signs such as diarrhoea, significant elevated mean rectal temperature, heart rate, respiratory rate, vomitions, dehydration, pale buccal mucus membrane. Similarly Baruah *et al.* (2007) recorded elevated body temperature and heart rate, paleness of mucous membrane, diarrhoea, anorexia, vomition and dehydration. Observed variations in the diarrhea were in accordance with the reports of earlier worker (Vasantha Kumari, 2011). In the present study 27 dogs were administered with Cefotaxime dosed at 25mg/kg body weight once/day, I/V for 5 days. Out of which 3 dogs died on 4th day of treatment. In contrast Banja *et al.* (2002) and Ramprabhu *et al.* (2002) reported that gentamicin is the drug of choice for treating gram negative gastroenteritis bacteria and parvoviral enteritis. The death of 3 dogs might be due to either severity of the agent or delay in initiation of the treatment.

Different variations in the clinical signs in different dogs may be due to individual host resistance, virulence of the viral agent and nutritional status of the individual dog (Banja *et al.*, 2002). Saho *et al.* (2007) reported haematemesis in dogs with CPV infection. In these study vomitions was one of the major clinical sign in infected dogs. Observed diarrhoea may be due to destruction and collapse of the germinal epithelium of the intestinal crypts and the resulting villous atrophy. (Bastan *et al.*, 2013). Observed dehydration is also one of the characteristic clinical sign in the present study it may be due to large quantity of fluid losses from vomiting and diarrhoea might be responsible for dehydration (Greene and Decaro, 2012).

Case with CPV infection progresses rapidly and causes severe dehydration, finally leads to death. By providing the aggressive supportive therapy, specific treatment for correction of hypoglycemia and any electrolyte disturbances improve the condition (Goddard and Leisewitz, 2010). In the present study Cefotaxime has broad spectrum of activity against few Gram-positive and most of the Gram-negative bacteria. Fluid therapy was advised to correct dehydration, re establish circulating blood volume, to correct electrolyte and acid-base disturbances restore the fluid loss through vomitions and diarrhoea (Prittie, 2004).

Conclusion

Among the 27 CPV infected dogs 24 were successfully treated with Inj. Cefotaxime, Inj. Perinorm, Inj. Rantac (Ranitidine) and with fluids (based on severity and percentage of dehydration).

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