

*Short Communication*

Comparative Study on Medical Management of Parvo Viral Enteritis in Dogs

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ABSTRACT

Sixteen unvaccinated dogs of various breeds, aged between two to six months old were selected for this study. They had a common history of pyrexia, anorexia, vomiting and foul smelling bloody diarrhoea. Clinical examination revealed marked dehydration, tachycardia, weak pulse, congested visible mucous membranes and sunken eyeballs. Faecal samples were collected for snap test (faecal antigen test). Blood samples were collected for complete blood profile and serum biochemistry at day 1, day 5 and day 10. Based on the history, clinical signs and laboratory report, the cases confirmed as Canine Parvo Viral Enteritis (CPVE). The confirmed dogs were divided into two groups. Group 1 (n=8) dogs were treated with standard treatment protocol. Group 2 (n=8) dogs were treated with standard protocol along with homeopathy drugs. Group 2 dogs recovered earlier when compared to Group 1 dogs. Haematology, serum biochemistry, treatment protocol and prognosis were discussed in detail.

Key Words: Allopathy, Canine, Homeopathy, Parvo viral enteritis.

INTRODUCTION

Canine parvovirus (CPV) is a small, non-enveloped single-stranded DNA virus that preferentially infects tissues with rapid cell turnover, including intestinal epithelium and bone marrow (Whitehead *et al*, 2020). Infection is characterized by vomiting, bloody diarrhoea and leukopenia. Mostly affect the dogs less than one year of age. Parvovirus infected dogs frequently present with dull mentation, dehydration, increased body temperature, tachycardia, and tachypnea. Advanced parvo viral infection results in sepsis and multiple organ failure (Mary, 2013). Endotoxin and pro-inflammatory cytokines, which are integral to the pathophysiology of Canine Parvo Viral Enteritis, are potent mediators of inflammation and can lead to systemic activation of haemostasis (Whitehead *et al*, 2020). Breeds such as Labrador Retriever, German Shepherd and American Pit Bull Terrier and aged between 1-6 months are highly

susceptible (Ahmad and Waheed, 2020). Male dogs are more prone to get infection than female (Funmilayo, 2019). Homeopathy medication is an alternative and potential remedy when it is combined with allopathic method and is simple, cheap and easy to administer. The assistance of veterinarian or para veterinarian is not required (Bala, 2017).

MATERIALS AND METHODS

The study was carried out in the dogs presented to the Veterinary Clinical Complex, Veterinary College Research Institute, Udumalpet for treatment. Sixteen unvaccinated dogs of various breeds, aged between two to six months were selected for this study. Dogs were presented with a common history of pyrexia, anorexia, vomiting and foul smelling bloody diarrhoea. Clinical examination revealed marked dehydration, increased Capillary Refilling Time (CRT) (>2 seconds) with dry and congested mucous membranes, tachycardia, weak pulse and

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sunken eyeballs. Faecal samples were collected from all the suspected CPV cases. Samples were tested with CPV antigen test kit (Bionote, Korea). Blood and serum samples were collected for haematological and biochemical analysis at regular interval i.e. on day 1, day 5 and day 10. Faecal samples were also collected for parasitological examination. Confirmed CPVE cases of dogs selected were randomly divided into two groups. Group 1 dogs were treated with balanced electrolyte solution like Ringer Lactate @ 30 ml per kg BW, Antibiotic - Inj. Amoxicillin forte @ 10 mg per kg bodyweight, anti emetic - Inj. Ondansetron @ 0.2mg per kg BW and anti ulcer - Inj. Pantoprazole @ 1mg per kg BW. In severe cases, plasma volume expander - Hetastarch was used at the dose rate of 5-10 ml per kg BW (Ahmad and Waheed, 2020). In group 2, all the medicines were given similar to group 1 dogs in addition to Homeopathy medicines like Mercurius corrosivus, Arsenicum album, Ipecacuanha, and Nux Vomica at the potency of 200C five drops of each sublingually, at every six hours interval for a period of five days.

RESULTS AND DISCUSSION

Dogs with bloody diarrhoea due to CPV Infection- Fig 1 (a and b).



(a)



(b)

Rapid CPV test kits showing a positive test result for CPV infection - Fig 2.



Haematobiochemical parameters were estimated as per the standard procedures (Meunier *et al*, 1985 and Funmilayo, 2017) and the results have been presented in table 1.

Haematology revealed mild pancytopenia and anaemia on day 1 which progressively became near to normal on day 5 and day 10. Differential count revealed lymphopenia on day 1 which normalised on day 5. There were no abnormalities found in serum biochemical parameters. Faecal examination revealed no eggs of parasite. Animals treated with homeopathy and allopathy medicines responded to the treatment significantly similar to those mentioned by Bala (2017) and Pranjli (2018) and Homeopathy medicines when followed in Group 2 dogs along with allopathy medicine got the CPVE affected dogs to complete recovery by day 6 itself as compared to those in group 1 which could show recovery by day 8 only. Signs and symptoms of group 2 dogs expressed recovery towards normal on day 6 when compared to group 1 dogs (Table 2). Post infective complications like inappetence, cachexia and dull hair coat as observed in Group 1 dogs were not observed in Group 2 dogs.

Homeopathy is emerging as an alternative therapy in veterinary medicine (Day, 1999). Homeopathic treatment decreases the duration and number of stools in children with acute childhood diarrhoea (Jennifer *et al*, 2000). Similar comparative studies have been recorded already by Karthick Kumar 2020. Merc cor and Ars alb are the recommended drugs for parvo viral enteritis in dogs (Madrewar, 1996).

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Table 1. Haematobiochemical values in dogs with canine parvovirus infection (n=16).

Parameter (Mean Value)±	Day 1		Day 5		Day 10		Reference value
	G-I	G-II	G-I	G-II	G-I	G-II	
Hb (g/dL)	9.12±0.7	8±0.8	8.375±0.6	7.625±0.9	9.35±0.4	9.625±	12-18
PCV(%)	32.50±1.23	32.25±0.3	30.5±2.1	29.25±1.8	34.625±1.6	38.25±1.7	37-55
RBC x 10 ⁶ / µl	6.162±0.7	6.125±0.5	5.6±0.9	5.05±0.7	6.27±0.5	6.45±0.6	5.5-8.8
WBC x 10 ³ / µl	16.375±1.8	21.15±2.0	8.875±1.0	10.125±1.1	14±1.4	13.25±1.6	6 – 17
Neutrophil %	78.6	84	67.625	67.75	73.75	73.37	60-70
Lymphocyte %	24.6	26.1	15.9	20.7	25.4	30.8	30-40
BUN mg/dL	31	26.25	26.5	25	31.375	27.25	10-40
Creatinine mg/dL	0.88	0.75	0.91	0.775	0.88	0.77	0.4-1.2
ALT IU/L	60	64	89.125	89.875	65	69.125	10-94
Total Protein g/dL	5	4.75	6.325	5.75	5.5	5.75	5.5-7.6

Group 1 (G1) - Allopathy treatment alone; Group 2 (G2) – Both allopathy and homeopathy

Table 2. Day wise signs and symptoms in dogs with CPV Infection.

Sign / symptom	Anorexia		Vomiting		Diarrhoea		Dehydration status		Pulse (quality)		CRT (Sec)		H/R (Min)	
	G1	G2	G1	G2	G1	G2	G1	G2	G1	G2	G1	G2	G1	G2
Day 1	+++	+++	+++	+++	+++	+++	++	+++	++	+++	3	3	140	140
Day 2	+++	+++	++	+++	+++	++	++	++	++	++	2	2	118	130
Day 3	+++	++	++	++	++	+	++	++	+	+	2	2	112	118
Day 4	++	++	+	-	++	+	+	+	+	-	2	2	120	120
Day 5	++	+	-	-	++	-	+	+	+	-	2	2	120	120
Day 6	+	-	-	-	+	-	+	-	-	-	2	2	116	118
Day 7	-	-	-	-	+	-	+	-	-	-	2	2	116	120

Mild (+), Moderate (++) and Severe (+++) &

Pulse Quality: Moderately weak (+), Weak (++) and Thready (+++)

CONCLUSION

It could be concluded that combined therapy with Allopathy and Homeopathy medicines for dogs suffering with canine parvo viral enteritis resulted better when compared to dogs treated with regular allopathy treatment alone. Co- administration of allopathy and homeopathy treatment protocol for canine parvo viral enteritis would be a useful regimen for speedy recovery and to avoiding post infection complications.

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