

## Treatment of Canine Parvo Viral (CPV) infection in a Pup - A Therapeutic and Nutraceutical Approach

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### Introduction

The canine parvoviral infection (CPV) is a highly infectious viral disease of dogs which of great concern to pet owners, practicing veterinarians and scientists due to severe hemorrhagic gastroenteritis, high morbidity and fatality rate (Thompson *et al.*, 1978, Kelly and Atwell, 1979). It is characterized by dysentery, vomitions, dehydration and death if untreated. The severity of diarrhea depends on prevailing intestinal flora and secondary bacterial infection caused by enterotoxigenic *Escherichia coli*, *Salmonella* spp. and others. The present report is on canine parvoviral infection in a five month old Cocker Spaniel dog and its therapeutic management.

### Case History and Clinical Observations

A five month old, male Cocker Spaniel dog was brought to BSPCA hospital, Parel, Mumbai with complaints of passing foul smelling watery diarrhea with blood, vomiting, complete loss of appetite and depression. Clinical examination of the dog revealed congested conjunctival and oral mucous membranes, temperature 103°F, shallow respiration (13/min), pulse and heart rate of 70/min and a moderate dehydration. Abdominal palpation did not show any abnormalities. The important finding noted during inspection was that the dog passed voluminous stool which was watery in consistency, bright red in color indicating presence of frank blood with significant frothing and a fetid odor (Fig.1).

### Diagnosis

Further, the dog was subjected to various laboratory examinations. A Complete blood count examination revealed that all parameters were in normal physiological ranges except a mild

lymphocytosis. Liver and Kidney function tests also revealed normal values. A marked increase in clotting time- 11 minutes was an alarming observation. A lateral abdominal X-ray confirmed absence of obstructions, adhesions, organ enlargements and foreign bodies. A parasitological examination of the stool sample confirmed absence of all forms of parasites & their life-cycle stages. On the basis of history and the clinical examination the case was tentatively diagnosed as a case of Enteric Canine parvoviral infection.

To confirm suspicion of CPV-2 infection, a Direct Hemagglutination test was performed using a protocol specific for detection of CPV-2 and the fecal sample as the source of suspected antigen. This screening test revealed the presence of CPV antigen in the stool. For further confirmation, the diagnostic CPV-Kit was used for the analysis of the fecal sample which also revealed positive result.

On the basis of clinical signs, direct hemagglutination test and CPV-Kit, the case was confirmed as Canine enteric parvoviral infection.

### Therapeutic management

The dog was further subjected to fluid therapy @ 50ml/kg b.wt including DNS 250ml, Ringer's Lactate 350 ml i/v to replenish fluid and electrolyte loss. Inj Intacef<sup>a</sup> (Ceftriaxone sodium) a broad spectrum antibiotic was given @ 20mg/kg b.wt intravenously to control secondary bacterial infection, inj. Metronidazole @ 7.5 mg/kg intravenously to control anaerobic infection and diarrhea. Supportive therapy comprised of administration of a systemic coagulant- Inj Carbazochrome salicylate 1ml intramuscular, Inj Calcium gluconate 3 ml intravenously given to normalize blood clotting time, inj Metoclopramide 0.5ml intramuscularly given to control vomiting and Inj. B-complex supplementation was given parentally. Fresh colostrum of a cow was also fed to the dog @ 1 tsp thrice daily as it a rich source of

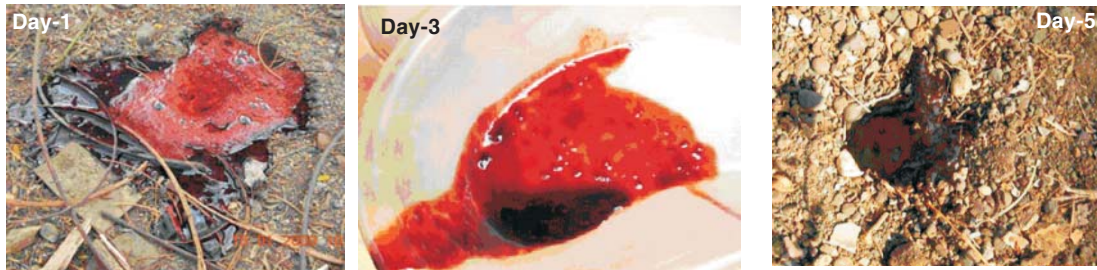
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## Canine Parvoviral infection in Pup

Fig 1, 2, 3 Showing changes in fecal color and consistency on day 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> day respectively.



immunoglobulins against common environmental pathogens. The treatment regimen was followed for 7 days from the date of admission.

The dog started showing gradual improvement in condition. By the fifth day, hydration status had improved, rectal temperature, mucous membranes respiration had normalized. The stool color and consistency gradually normalized. The dog was continued with oral supplementation of Probiotic tablets containing Lactic acid bacillus to restore the normal gut flora once daily for fifteen days and simple food.

### Discussion

Canine parvoviral gastro-enteritis in puppies and young dogs is of high clinical significance due to high morbidity and mortality (Masare, 2004). In patho-physiology of diarrhea and gastroenteritis, dehydration accompanied with electrolyte disturbances is a main feature. There is a depression, loss of condition, progressive dehydration, haemoconcentration and metabolic acidosis leading to death within few days of the onset of diarrhea in untreated cases (Radostis *et al.*, 2000).

Carmicheal *et al.* (1980) documented use of haemagglutination test to differentiate parvovirus from feline panleucopenia virus (FPV), mink enteritis virus (MEV) and minute virus of canines. Further laboratory studies indicated that faecal HA test followed by faecal HI test was rapid and highly specific tests for definitive diagnosis of canine parvoviral infection.

Masare (2004) reported use of Ceftriaxone @ 20 mg/kg body weight once daily, intravenously for 3-5 days and supportive treatment in six CPV-enteric dogs. The present case was successfully treated with Inj. Intacef<sup>a</sup> (Ceftriaxone) along with colostrum therapy. Joshi (2004) successfully

treated 25 dogs affected with canine parvoviral infection as well as dogs infected with bacterial enteritis with combination of antibiotics and colostrum as well as with only colostrum. This might be due to passive immunity provided through colostrum against common enteric pathogens such as *E. Coli*, *Salmonella spp.* etc. Cow colostrum is rich in easily digestible proteins, fats and ash. In addition it has high amounts of Vitamin A which helps in epithelial cell regeneration of intestines.

In the present case, the prolonged clotting time was a major factor contributing to the severe blood-loss in stool. However the problem was successfully managed by administering a systemic coagulant and Calcium salt parentally.

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