CORRELATION OF CANINE PARVO VIRUS INFECTION WITH *Escherichia coli* IN CLINICAL CASES

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Canine parvovirus (CPV) is a highly contagious and an acute life threatening infection that causes gastroenteritis, acute hemorrhagic diarrhoea, dehydration and immunosuppression resulting in morbidity and mortality in dogs (Appel *et al*., 1987). Long term excretion of CPV is major source of infection among dogs. *E.Coli* are considered as one of the major pathogens and found as natural commensals in gastrointestinal tract. Various diagnostic methods have been developed for detection of CPV from dog faeces (Manoj Kumar et al., 2011 and Cho et al., 2006) including Fastest Parvo Kit (Megacor Diagnostic, Astria) and the same is being used in the present study for detection of CPV . Hence an attempt was made in the present study to explore the presence and association of *E.Coli* with Parvo virus in clinical dogs.

MATERIALS AND METHODS

24 faecal samples (parallel samples) from dogs with history of gastroenteritis and diarrhoea irrespective of their breed, age and sex were collected during the period from September to December 2012 and were screened for the presence of canine parvo virus (CPV) using Fastest Parvo strip test kit as per manufacturer's instructions which can be used for detection of the parvovirus specific antigens CPV-1, CPV-2, CPV-2a, CPV-2b and CPV-2c. At the same time all the 24 fecal samples were inoculated into nutrient broth, incubated at 37^{0}C for 6 hrs and then streaked on to MacConkey's agar and Eosin Methylene Blue agar plates. Plates were incubated at 37^{0}C for 18 hrs and bacterial isolates were identified on the basis of morphological, cultural and biochemical characteristics (Edward and Ewing 1972).

For determining the virulence potential, the *E.coli* isolates obtained were screened for hemolysin production by streaking onto 5% sheep Blood agar and Congo-red dye (CR) binding ability by streaking onto tryptic soya agar containing 0.03% CR and 0.15% bile salts.

All the *E.coli* isolates were tested for their *in-vitro* antibiotic sensitivity pattern using disc diffusion technique (Bauer *et al.,* 1966) against 8 antibiotic disc (Hi-Media) *viz.* amoxicillin (Am), chloramphenicol (C), ceftriaxin (Ci), novobiocin (Nv), nalidixic acid (Na), neomycin (N), amoxyclave (Ac), streptomycin (S).

RESULTS AND DISCUSSION

Out of 24 faecal samples screened for CPV using Fastest Parvo strip test kit (Megacor Diagnostics, Austria), only 4 (16.67%) samples were found to be positive for presence of parvo virus antigen. The similar findings were observed by Ingle *et al.,* (2009) who reported 20 percent incidence of canine parvo virus. A higher incidence of 60 per cent has also been reported earlier by Bodkhe *et al.* (2009) using the same kit which may be due to viral gastroenteritis .

Only 6 (25 %) were identified as *E.coli.* The similar findings were observed by Ingle *et al.* (2009) who reported 20 per cent of samples to be positive for *E.coli*. None of the isolates could show

hemolysis on blood agar and congo-red binding ability indicating non pathogenic nature of *E.coli* organisms as they could be present as natural commensals in the gastrointestinal tract.

Antibiotic sensitivity testing revealed all the 6 isolates were found to be sensitive to novobiocin, chloramphenical and nalidixic acid whereas, resistant to ceftraxin and amoxyclave.

Of the 6 *E.coli* isolates, 4 were isolated from the fecal samples found positive for parvo viral infection indicating the positive correlation between the *E.coli* and canine parvo viral infection. This positive correlation might be due to the immunosuppression caused by canine parvo virus in the infected dogs. Moreover *E. coli* are common in faeces of animals and experimental studies on pathogenesis of *E. coli* in presence and absence of Parvo virus infection are required to be conducted before drawing any conclusion on their role.

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