DIAGNOSIS OF CANINE PARVOVIRUS INFECTION IN DOGS USING FASTEST PARVOSTRIP AND HAEMAGGLUTINATION TEST

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ABSTRACT

In the present study dogs having complaints of anorexia, vomition and foul smelling haemorrhagic diarrhoea were screened for canine parvovirus by subjecting the faecal sample for HA test followed by fastest parvo strip containing monoclonal antibody. Out of 30 dogs 18 were found to be positive for canine parvovirus infection.

KEY WORDS: HA test, Fastest Parvostrip, Canine parvovirus.

INTRODUCTION

Among the dreaded diseases of dog, haemmorrhagic gastroenteritis is most commonly encountered disease. The causative agent is a virus, which is difficult to be isolated and identified in field condition. Tentative diagnosis of canine parvovirus is possible by subjecting faecal samples to haemagglutination test (Banja *et al.,* 2002). However, fastest parvostrip containing monoclonal antibody (manufactured by Megacor Diagnostic, Austria, Horbranze) is reported to be more rapid and confirmatory test. Considering economical losses caused due to morbidity and mortality and contagious nature of the disease, CPV infection diagnosis in dogs is important. Therefore,the present investigation was undertaken to diagnose the canine parvovirus.

MATERIALS AND METHODS

The present study was carried out on dog population of Nagpur City (Maharashtra State), which were presented to Teaching Veterinary Clinical Service Complex of Veterinary College; Nagpur and private pet clinics of Nagpur. During the period of investigations, a total 30 dogs were screened for canine parvovirus. Faecal samples were collected from affected dogs in sterilized glass vials (10 ml) with screw cap. Haemagglutination test was carried out immediately after collection of the faecal sample. The test was conducted as per method described by Dahiya and Kulkarni, (2004), while fastest parvo strip method was performed as per method described by Grigonis *et al.* (2002).

For the HA test, Swine blood was collected in Alsever's Solution and was processed to get 1% erythrocyte suspension. To avoid auto haemagglutination the PBS (0.3 M Phosphate) containing 3% fetal calf serum (FCS) at pH 6.0 was used for preparation of swine RBC suspension. Each faecal sample was diluted 1:10 in Borate buffered saline, (BBS) pH 6.0 and after centrifugation at 3000 rpm for 20 min, the supernatant was used as a source of virus. It was then subjected to heat treatment at 56^0C for 30 minutes as suggested by Carmichael *et al.* (1980). To avoid other possible haemagglutinating viruses/ bacteria, the supernatant was treated with 0.1% chloroform for one hour.

HA TEST FOR THE DIAGNOSIS OF CANINE PARVOVIRUS:-

Two-fold dilutions of the supernatant of each faecal homogenate were made in PBS (pH 6.0) starting from a 1:2 dilution. Tests were carried out in 96-well V-plates (50 µl of sample dilution per well); equal amounts of a suspension containing 0.8% pig erythrocytes and 3 % foetal calf serum (FCS) were added to each dilution. Results were read after 4 h at +4 °C and expressed as the reciprocal of the highest sample dilutions able to produce HA. Samples with HA titers = 8 were considered negative. Samples with HA titers = 16 were confirmed as positive.

Confirmation of parvoviral infection was done by using fastest parvostrips (Megacor Diagnostics, Horbranze, **AUSTRIA),** by the following procedure:

0.4 gm of faecal sample was taken in a sample tube containing buffer fluid with the help of a spoon.

The faecal sample was dissolved in buffer fluid and allowed to settle large particles at the bottom. A dipstick (provided with the kit) was introduced vertically in the sample tube for one minute (Plate 1) and removed and kept on a flat surface. After 5 minutes the dipstick was observed for any change, pink purple line in the test zone of strip was considered positive for parvovirus (Plate 2).

Plate1. Fastest Parvostrip deeped in faecal Antigen.

Plate 2.Strip showing positive

RESULTS AND DISCUSSION

Samples showing mat /lattice of haemagglutination were considered as positive while button formation as negative, In case of fastest parvostrip the faecal sample containing parvovirus revealed additional pink – purple line in the test zone like in control zone of the strip which is considered as confirmatory diagnosis for canine parvovirus in the present investigation(Plate 2). Out of 30 dogs irrespective of their breed 18 dogs were found positive for canine parvovirus (CPV) by both the diagnostic test. The present findings are in agreement with various workers like Sherikar and Paranjape (1985); Joshi *et al*. (2000) and Dahiya and Kulkarni (2004), who also confirmed CPV infection by HA test by using 1% porcine RBCs.

In the present experiment it was concluded that the HA test and Fastest Parvo Strip method were found to be confirmatory test for diagnosis of CPV infection in dogs.

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