Short Communication

OCCURRENCE OF CANINE PARVOVIRAL GASTRO ENTERITIS IN AND AROUND BENGALURU

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ABSTRACT

Canine parvoviral gastroenteritis is one of the most common viral diseases found in dogs and caused by canine parvovirus (CPV) type 2. Young dogs are highly susceptible to the disease with high morbidity and mortality. The present study was conducted at the Department of Veterinary Medicine, Veterinary College, Bengaluru to know the occurrence pattern of CPV infection among PCR positive dogs under one year of age presenting with signs of gastroenteritis. The occurrence of CPV infection was high in puppies less than three months old, non-descript, male, irregularly dewormed, unvaccinated dogs weighing between four andeight kilograms, acquired from breeding kennels and housed indoors in a multi-pet household. These epidemiologic patterns highlighted the need for timely vaccination, deworming and biosecurity measures to mitigate CPV burden and improve survival in puppies.

Key words: Canine parvovirus, vaccination, Bengaluru

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INTRODUCTION

After domestication, dogs have taken a centre place in the modern society as companion animal. Dogs are susceptible to variety of diseases, among which viral infections constitute the majority of preventable diseases. Canine parvoviral gastroenteritis is one of the most common viral diseases found in dogs and caused by canine parvovirus(CPV) type 2(Cotmore *et al.*, 2014). In the late 1970, CPV-2 was first isolated and identified. Since then, it has evolved into several new variants, namely CPV-2a, CPV-2b, CPV-2c, new CPV-2a, and new CPV-2b (Pu *et al.*, 2024). Canine parvoviral enteritis is an acute, highly contagious viral disease that predominantly affects young puppies between 6 and 20 weeks of age (Badwaik *et al*., 2022). The risk of infection and clinical illness is particularly high in unvaccinated puppies under six months of age (Eregowda *et al.*, 2020).The present study was undertaken to understand the epidemiological pattern of occurrence of CPV infection in and around Bengaluru.

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MATERIALS AND METHODS

The study was undertaken at the Department of Veterinary Medicine, Veterinary College, Hebbal, Bengaluru. The study population comprised of 36 dogsbelow one year of age,which were tested positive for CPV by PCRas described by Buonavoglia *et al*. (2001). Comprehensive information about the dogs, regarding age, breed, sex,body weight, source of adoption, housing pattern, feeding habits, deworming and vaccination status, and history of contact with the infected dogs were collected from the owners and analysed.

RESULTS AND DISCUSSION

The CPV remains a globally significant enteric pathogen of dogs, characterized by a tropism for rapidly dividing cells in the intestinal crypts, lymphoid tissues and bone marrow that causesdisruption of mucosal barrier, leukopenia and haemorrhagic gastroenteritis despite the availability of effective vaccines (Navarro, 2020). Clinically, young dogs and unvaccinated dogs are at greatest risk (Tangolli *et al*., 2024).

Among 36 CPV infected dogs, the highest occurrence of CPV infection was detected in dogs less than three months old (17, 47.22%), followed by three to six months old (13, 36.11%) and six to nine months old (5, 13.88%). The predominance of CPV infection in dogs younger than three months of age could be attributed to factors such as high epithelial turnover, alterations in diet and gut microbiota, weaning, relocation stress and waning of maternal antibodies (Badwaik *et al*., 2022; Sherasiya *et al*., 2024; Jayaprasad *et al.*, 2025).

Among 14 breeds of dogs in the study population, a higher occurrence of CPV infection was recorded in non descript dogs (9, 25%), followed by American Bully (5, 13.88%), Labrador Retrievers (4, 11.11%), Pitbulls (3, 8.33%), Crossbred, German Shepherd Dog, Golden Retriever, Shih Tzu, Siberian Husky (2, 5.55% each), Cocker Spaniel, Doberman Pinscher, Great Dane, Indian Spitz and Poodle (1, 2.77% each). The occurrence of CPV infection based on breeds largely depends on regional population of dog breeds, adoption trends followed by the owners, exposure of susceptible animals to the infective environment, vaccination coverage and schedule followed (Geetha and Selvaraju, 2023; Panchasheel *et al*., 2024; Jayaprasad *et al.* 2025).

Among CPVinfected dogs, 21 (58.34 %) were males and 15 (41.66 %) were females.The higher proportion of male dogs among CPV infected cases is likely due to greater male representation in the sampled population, increased infective environmental contact, preference by owners for male dogs or may be due to poor vaccination coverage (Panchasheel *et al*., 2024; Sherasiya *et al*., 2024; Jayaprasad *et al.,* 2025).

Out of 36CPV infected dogs, the highest occurrence of CPV infection was observed in dogs weighing four to eight kilograms (kgs) (17, 47.22%), followed by

those weighingzero to four kgs (12, 33.33%) and above eight kgs (7, 19.44%). A higher occurrence of CPV infection observed in dogs weighing between four to eight kgs, which is influenced by both breed and age of the animal. Although dogs below three months of age were found to be more susceptible to CPV infection in the present study, a higher occurrence was noticed in breeds such as non-descript, American Bully, Labrador Retrievers, Pitbulls, German Shepherds and Golden Retrievers. The body weight of pups from these breeds commonly ranges between four to eight kg at less than three months of age, which corresponds with the higher occurrence noted in this weight category (Panchasheel *et al.*, 2024; Jayaprasad *et al*., 2025; Oleiwi *et al.,* 2025).

Among CPV infected dogs, the highest occurrence of CPV infection was observed in dogs obtained from breeders or kennels (17, 47.22%), followed by those adopted from family or friends (11, 30.55%), abandoned or stray dogs (6, 16.66%) and dogs born in the house (2, 5.55%). The higher occurrence of CPV infection among breeder or kennel sourced dogs could be due to the overcrowding, stress, improper preventive measures, early weaning, inadequate transfer of maternal antibodies, concurrent parasitism, nutritional status and incomplete vaccination (Tangolli *et al*., 2024; Hadden and Herron, 2025).

The highest occurrence of CPV infection among the 36 infected dogswas observed in dogs reared under a fully indoor housing pattern (22, 61.11 %), followed by those kept indoors with limited outdoor access (12, 33.33%) and outdoor dogs (2, 5.55 %). The occurrence of CPV infection was higher in dogs reared along with multiple pets (19, 52.77%) compared to those maintained as single pet (17, 47.22%). The higher CPV infection rates observed among fully indoor animals may be attributed to factors such as age of the animals and sample size. A greater occurrence of CPV infection in multi-pet households, which could be due to rapid virus transmission or the introduction of an infected animal into a susceptible group (Mylonakis *et al.*, 2016; Khare *et al.*, 2020;Tangolli *et al*., 2024).

The highest occurrence of CPV infection was observed in dogs fed commercial food (25, 69.44%), followed by those on home made diets (9, 25%) and transitional feeding (2, 5.55%). A higher occurrence of CPV infection observed among puppies fed commercial dietslikely due to most puppies in the study were sourced from kennels where commercial diets are commonly provided, and also reflects increased awareness among pet owners about balanced nutrition (Badwaik *et al.*, 2022; Geetha and Selvaraju, 2023; Jayaprasad *et al*., 2025).

The highest occurrence of CPV infection was observed in irregularly dewormed dogs (21, 58.33%), followed by regularly dewormed dogs (11, 30.55%) and dogs that had never been dewormed (2, 11.11%). The higher occurrence of CPV infection among irregularly dewormed dogs may be attributed to compromised gut integrity, reduced availability of essential nutrients and weakened immune function

caused by parasitic infections (Khare *et al*., 2020; Tangolli *et al*., 2024).

The highest occurrence of CPV infection was observed in unvaccinated dogs (19, 55.55%), followed by irregularly vaccinated dogs (11, 30.55%) and regularly vaccinated dogs (5, 13.88%). The higher occurrence of CPV infection among unvaccinated puppies is due to the absence of specific immunity against the virus. Factors such as missing the primary vaccination series, improper vaccine storage and handling, failure to adhere to the vaccination schedule, interference from maternally derived antibodies, exposure to CPV before completing the vaccination schedule and poor host immune response can all lead to reduced or absence of specific immunity, making animals more susceptible to CPV infection (Geetha and Selvaraju, 2023, Tangolli *et al*., 2024, Jayaprasad *et al.*, 2025; Oleiwi *et al*., 2025).

The occurrence of CPV infection was higher in dogs with a history of contact with infected dogs (23, 63.88%) compared to those without such contact (13, 36.11%). The dogs with a history of contact with infected animals had higher occurrence of CPV infection due to the highly contagious nature of the virus, which spreads efficiently through direct contact and contact with contaminated environments (Ford *et al.*, 2017; Tangolli *et al.*, 2024; Hadden and Herron, 2025).

CONCLUSION

In conclusion the highest occurrence of CPV infection was observed in dogs less than three months old, non-descript, male, irregularly dewormed, unvaccinated dogs weighing between four to eight kgs, acquired from breeding kennels and housed indoors in a multi-pet household. Timely preventive care can reduce the occurrence of CPV infection in dogs.

CONFLICT OF INTEREST

Authors declare no conflict of interest.

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