

Co-infection of dogs with canine coronavirus and canine parvovirus in Korea

Seok-Young Jeung, So-Jeo Ahn, Doo Kim*

*Department of Veterinary Internal Medicine, School of Veterinary Medicine,
Kangwon National University, Chuncheon 200-701, Korea*

Purpose: Canine coronavirus (CCV) and canine parvovirus type 2 (CPV-2) are the most common causative agents of gastroenteritis in puppies from 6 weeks to 6 months of age. There are several reports on CPV infection or CCV infection in dogs. However, to date epidemiological data about co-infection between CCV and the CPV-2 have not been generated. The purpose of the study reported here was to evaluate the prevalence of CCV and CPV-2 infections in gastroenteritic dogs.

Materials and Methods: The 396 fecal specimens of dogs with signs of enteritis were collected from June, 2003 to October, 2007. DNA and RNA were extracted from the fecal specimens, and then PCR or RT-PCR was carried out to detect VP2 gene of CPV and M gene of CCV, respectively.

Results: CPVs were detected from 280 (75.3%) out of 396 specimens and CCVs were detected 131 (35.2%) specimens. The 105 dogs were co-infected with CPV-2 and CCV. The 108 out of 280 CPV strains were subtyped. The 105 strains were belong to CPV 2a and only 3 strains were CPV 2b. The 110 out of 131 CCV strains were subtyped. The 39 strains were belong to CCV genotype I and 16 strains were genotype II. Fifty-five strains were belong to both genotypes. Among 234 dogs recorded the prognosis, 157 (67.1%) dogs survived. Seven (70.0%) of 10 dogs infected with only CCV survived, 76 (69.7%) of 109 dogs infected with only CPV-2 survived. And 34 (50.7%) of 67 dogs infected simultaneously with CCV and CPV-2 survived.

Conclusion: Clinical study and molecular biology of these viruses is important primarily for epidemic control and preventive measures.

Key words: canine coronavirus, canine parvovirus, co-infection, Korea

* Corresponding author: kimdoo@kangwon.ac.kr