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From the Clinical to the Molecular Diagnosis of Canine Distemper Disease

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SUMMARY

Canine distemper virus (CDV) is a member of genus *Morbillivirus* and family *Paramyxoviridae* that have a negative single-strand RNA genome (Appel, M.J.G., 1987). Canine distemper is a multi-systemic viral disease of dogs characterized by a wide variety of clinical manifestations and lesions, and several other protozoal, bacterial and viral infections as well as toxin poisoning mimic distemper symptoms (Beineke et al, 2009; Green & Appel, 1998). Therefore, the signs are not always suggestive for canine distemper suspicion, and the etiological diagnosis need to be performed. The most used methods of CDV diagnosis are ELISA, direct and indirect immunofluorescent antibody tests, seroneutralisation, and immunofluorescent techniques to detect viral antigen were commercially available, and the veterinary laboratories usually perform them (Green & Appel, 1998). Unfortunately, the most of these techniques have their diagnostic limitation and sometimes can lead to false positive results. Thirty cases of dogs, different mixed breeds and aged less than one year were investigated for CDV infection by ELISA IgG (ImmunoComb®, Biogal, Israel), ELISA IgM (ImmunoComb®, Biogal, Israel), Immunochromatographic CDV-Ag test (CDV IC, Agrolabo, Italy), and reverse transcription polymerase chain reaction (RT-PCR). The blood serum samples were collected from unvaccinated dogs with nervous manifestations and a history of disease up to one month. Eight (8/30) samples were IgM and IgG positive, fourteen (14/30) samples were only IgG positive, all immunochromatographic antigenic tests and RT-PCR were negative. In our opinion, the presence of CDV-antibodies leads to false-negative results for the antigenic and genomic viral tests. These results suggest that blood serum samples from dogs with nervous manifestations are not useful for antigenic tests and RT-PCR.

Keywords: CDV, RT-PCR, immunodiagnostic, infectious diseases, canine pathology

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