TITLE: MOLECULAR DETECTION OF CANINE DISTEMPER VIRUS IN DIFFERENT BIOLOGICAL SAMPLES

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ABSTRACT:

Canine distemper (CD) is a multisystemic infection associated with high morbidity and mortality in susceptible dogs. The highly contagious nature of CDVrequires a fast and sensitive diagnosis in order to start an early treatment. Clinical specimens including conjunctival swab, urine, whole blood, plasma, serum and cerebrospinal fluid have been used for an ante-mortem diagnosis. RT-PCRis a specific method to detect even small amounts of virus early in infection. This study presents the canine distemper molecular diagnosis routineof different biological samples, from animals attended at the Veterinary Hospital of Federal University of Paraná, Palotina city, Paraná, between the years 2014 and 2017. Sixty-two animals with suggestive clinical signs of CDV, were tested from whole blood (n=22), urine (n=30) or conjunctival swab (n=10) samples. All samples were submitted to treatment with silica/guanidine isothiocyanate to extract the viral RNA. Subsequently, RT-PCR was used to partially amplify the nucleoprotein (NP) gene of CDV, which is highly conserved between strains. Of the62 attended animals, 43.5% (27/62)were diagnosed as CDV-positive. Regarding the nature of the biological sample, CDV genome was detected in 27.3% of the whole blood (6/22), in 50% of urine(15/30) and 60% of conjunctival swab (6/10) samples tested. Some reports indicates that CDV appears earlier from the conjunctival fluid and is eliminated later, than any other fluid sample. Although, the present study could not compare the frequency of detection of CDV of different biological samples from the same animal, the higher proportion of positive samples in conjunctival swab suggests the importance of the type of biological sample to conduct early diagnosis and treatment of canine distemper.

Keywords: canine distemper virus, RT-PCR, urine, whole blood, conjunctival swab