A COMPARISON OF VIRAL INFECTION AND ANTIGEN PRIMING INDUCED CHANGES IN THE FIRST LINE OF CELLULAR DEFENCE IN DOGS

Brudaşcă Gh.F., Marina Spînu, Carmen Dana Şandru, L. Kobolkuti, Krisztina Rindt, Mihaela Niculae, Rodica Popescu, S. Karolyi

University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania, Str. Manastur, No.3-5, email: florinbrudasca@yahoo.com

Keywords: dogs, parvovirus, distemper, cellular defense, vaccination

SUMMARY

The most important canine viral infections are distemper and canine parvovirus 2 (Carmichael, 1999). The latest is a well known viral cause for leuokopenia while development of cell mediated immunity to canine distemper is dependant on age of the dog at the time of vaccination (Chalmers and Baxendale, 1994). Nevertheless, induction of immunomodulation and suppression is a common feature of canine distemper virus. The study aimed to monitor changes of total leucocytes and their subpopulations during natural cases of parvoviral disease (n=8) and distemper (n=6), in groups of animals diagnosed by Rapigen Parvo and Rapigen Distemper Ag Tests, versus double (group I) or triple (group II) vaccination with a mixed vaccine against distemper, hepatitis, parvovirus and parainfluenza. Blood samples were drawn once from the diseased puppies and on days 0, 14, 28, 35 following vaccinations from the healthy ones. Total leukocyte counts were done by Turk stain and subpopulations of leucocytes were estimated by Dia-Quick Panoptic test. Total leukocyte numbers were lowered in parvovirus infected puppies (8,719±1,542.96/mm$^3$) compared to distemper positive animals (14,507±2,490.29/mm$^3$), still higher than in vaccinated groups after 35 days following the first vaccination. The increasing number of vaccine doses negatively influenced the total leukocyte numbers (7,547.5±2,956.8/mm$^3$ after two versus 5,994±732.93/mm$^3$ after three vaccinations). Neutrophile:lymphocyte ratios were higher in distemper infected dogs (3.12) than in parvovirus infected ones (1.4). After two vaccinations, the ratio warried from 1.44 to 0.48, 0.96 and 1.32 by day 35, while in those subjected to three vaccinations the neutrophile:lymphocyte ratio indicated less stress (1.1, 1.74, 1.54 and 1.13). The results showed that in target animals for complex vaccination, the vaccine acted as a stressing agent, inducing drastic changes in total leukocyte numbers and neutrophile:lymphocyte ratios, more pronounced than during the clinical disease, underlining the importance of checks of the immunological profile of the puppy before vaccination and restricting the number of vaccinations to fit the infectious pressure.

BIBLIOGRAPHY