TECHNIQUES FOR THE DIAGNOSIS OF NEOSPOROSIS IN A HERD OF DAIRY CATTLE IN SOUTHERN BRAZIL

LOCATELLI -DITTRICH, R.[1]; THOMAZ-SOCCOL, V.[2]; RICHARTZ, R.R.T.B.[3]; GASINO-JOINEAU, M.E.[3]; VAN DER VINNE, R.[4]; PINCKNEY, R.D.[5]

[1] Departamento de Medicina Veterinária – UFPR;
[2]Departamento de Patologia Básica – UFPR;
[3]Centro de Diagnóstioco "Marcos Enrietti", Curitiba-PR;
[4]Médico Veterinário;
[5]Universidade de Wisconsin-Madison, USA.

Neosporosis is a protozoal infectious disease caused by the coccidial parasite *Neospora caninum.* It was found first in tissues of dogs (Dubey et al., 1988) and later naturally occurring in cattle, sheep, goats, deer and horses. Numerous other hosts also have been shown to be experimentally infected. In bovine *Neospora caninum* is an important cause of abortion in many countries, including Argentina, Australia, Canada, Denmark, UK, Ireland, Israel, Japan, Mexico, the Netherlands, New Zealand, South Africa, Sweden and the U.S.A. It is a worldwide production problem (Dubey, 1999). Two immunological tests were used to detect *N. caninum* specific antibodies. A commercially-available ELISA kit (enzyme-linked immunosorbent assay; IDEXX Laboratories Inc., Westbrook, Maine, USA) was initially used to assay 172 serum samples (126 cows; 29 heifers; 15 calves; 2 pre-colostral calves) from a dairy herd in Parana State, Brazil. The absorbances were measured at a wavelenght of 620 nm. The serum samples with S/P (sample to positive) ratios of less than 0.50 were classified as negative for Neospora antibodies. If the S/P ratio was greater than or equal to 0.50 the sample was positive. All sera from ELISA positive samples (n=60) and ELISA sero-negative cows (n=11) that had aborted were subsequently tested using the IFAT (indirect fluorescent antibody test). The slides were prepared at the School of Veterinary Medicine, University of Wisconsin, Madison, Wisconsin (USA) and used a commercial anti-bovine secondary IgG conjugate (Bovine IgG1,2; VMRD Inc., Pullman, Washington). Test sera were diluted 2–fold at 1:25, 1:50, 1:100 and 1:200 using phosphate-buffered saline (PBS, pH 7.2). Whole parasite fluorescence was considered indicative of the presence of *N. caninum* antibodies. In each series of ELISA and IFAT performed, positive and negative sera were included as control. Sixty of the 172 (34.8%) were classified as sero-positive for *N. caninum*-specific antibody. Age-specific ELISA sero-prevalence proportions were 47 of 126 (37.3%) adult cows, 7 of 29 (24%) heifers (1-2 yr), 4 of 15 (27%) heifers (5 mo to 1 yr), and 2 of 2 (100%) pre-colostral samples. The 2 pre-colostral samples were obtained from calves born healthy and whose dams were sero-positive for *N. caninum*. The ELISA positive samples (60) were positive by IFAT at 1:25 dilution. The IFAT dilutions at 1:50, 1:100 and 1:200 found, respectively, 58, 55 and 42 positive animals. The correlation between ELISA and IFAT was 100% at the dilution of 1:25, and 96.6%, 91.6% and 70%, respectively, for 1:50, 1:100 and 1:200. There was perfect agreement at the lowest dilution (1:25) between IFAT and ELISA performed on 11 sera from cows which had aborted but that had yielded sero-negative ELISA results. The sero-positive cows had no reported clinical manifestations of disease other than abortion. The farm recorded 46 abortions, of which 31 (67.3%) were from sero-positive cows. Neosporosis should be considered as a potential cause of abortion by veterinarians, in addition to other abortifacient agents.

Key Words: Neosporosis; dairy cattle; ELISA and IFAT tests; abortion.
Research financed by Petrobras.