

SUB-ÁREA: Leptospirose em Animais de Produção e Equinos

The role of transplacental infection in *Leptospira* spp. epidemiology in cattle in Caatinga biome, Brazil

Nathanael Natércio da Costa Barnabé¹, Rafael Rodrigues Soares¹, Deivyson Kelvis Silva Barros¹, João Pessoa Araújo Júnior², Camila Dantas Malossi², Maria Luana Cristiny Rodrigues Silva¹, Arthur Willian de Lima Brasil³, Diego Figueiredo da Costa³, Severino Silvano dos Santos Higino¹, Carolina de Sousa Américo Batista Santos¹, Sérgio Santos de Azevedo¹, Clebert José Alves¹

¹ Academic Unit of Veterinary Medicine, Federal University of Campina Grande

² Department of Microbiology and Immunology, University of the São Paulo State

³ Department of Veterinary Science, Federal University of Paraíba

Leptospirosis is an infectious disease that affects domestic animals, wild animals, and humans. It represents a public health problem and has an important economic impact on livestock. This study aims to investigate the importance of genital and transplacental infection in the epidemiology of leptospirosis in cows maintained in Caatinga biome conditions, Northeastern Brazil, as well as reporting organs colonized by *Leptospira* spp. in embryos and fetuses. Blood, urinary tract (urine, bladder, and kidney), and reproductive tract (vaginal fluid, uterus, uterine tube, ovary, and placenta) samples were collected from 15 slaughtered pregnant cows. Two embryos and 13 fetuses were sampled. Central nervous system and choroid ovoid samples were collected from embryos. Blood, central nervous system, lung, peritoneal liquid, abomasal content, liver, spleen, urine, bladder, kidney, and reproductive system samples were collected from fetuses. Diagnostic methods included the microscopic agglutination test (MAT) using a collection of 24 serovars belonging to 17 different pathogenic serogroups of five species as antigens, as well as polymerase chain reaction (PCR). Anti-*Leptospira* spp. antibodies were found in 9 cows (60%), while 13 cows (86.67%) had at least one organ or urine with leptospiral DNA. No fetus was seroreactive. Among the embryos and fetuses, 13 (86.67%) presented leptospiral DNA, proving a high frequency of transplacental infection (100%). For cows, the most frequent biological materials regarding *Leptospira* spp. DNA detection were placenta (13 out of 15 samples; 86.7%), uterus (10 out of 15 samples; 66.7%), and vaginal fluid (5 out of 15 samples; 33.3%), while, for fetuses/embryos, the most frequent PCR-positive samples were choroid ovoid (1/2; 50%), spleen (6/13; 46.2%), kidney (5/13; 38.5%), and central nervous system (5/15; 33.3%). Sequenced samples based on the *LipL32* gene presented 99% similarity with *L. borgpetersenii*. The results indicate that transplacental infection is an efficient way of spreading *Leptospira* spp. in cows maintained in Caatinga biome, characterized by a semiarid climate. Therefore, prevention and control strategies must include actions that interrupt transmission through this alternative route.

Keywords: *Leptospira* spp.; semiarid; cows; embryos; fetuses; PCR.

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