ABSTRACT

Transplacental transmission of equine piroplasmosis in thoroughbred foals in Trinidad with a note on haematological and biochemical reference intervals for thoroughbred foals

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Transmission of equine piroplasmosis caused by *Theileria equi* and *Babesia caballi* occurs by ticks of the family Ixodidae. Only *T. equi* has been reported to be transmitted transplacentally. Therefore this study investigated transplacental transmission of equine piroplasmosis from thoroughbred mares naturally infected via the tick vector.

EDTA blood and serum samples were collected from 117 mares in the fifth month of pregnancy and their foals within the first 36 hours of birth. Serum ELISA, microscopic examination of blood smears, conventional (c) and real time (q) PCR analysis were performed on the samples for *T. equi* and *B. caballi.* Complete blood counts (CBC) and biochemical analyses were performed on the foals sampled at 0-2, 5-10 and 20-32 days *post-partum* in order to establish haematological and biochemical reference intervals for thoroughbred foals in Trinidad.

Thirty-four (30.6%) mares and 14 (15.7%) of their foals were seropositive for *T. equi*. Twenty-seven (24.3%) mares were positive for *T. equi* by cPCR. qPCR analysis revealed that seven (8%) foals were positive for *T. equi*. Eighty-nine (76.1%) mares and 40 (44.9%) of their foals were seropositive for *B. caballi.* Four (3.4%) mares were cPCR positive for *B. caballi* of which three aborted. Six foals were positive for *B. caballi* by qPCR.

From this study reference intervals were established for most of the haematological and biochemical parameters investigated. Age had a significant effect on the WBC and absolute neutrophil counts, haemoglobin, haematocrit, platelets, creatinine, GGT, total protein, albumin and globulin values of the thoroughbred foals investigated.

There is strong evidence that in addition to *T. equi*, transplacental transmission of *B. caballi* can occur. Mares should be screened during pregnancy and their foals closely monitored at parturition for evidence of equine piroplasmosis so that treatment can be implemented earlier for a better prognosis**.**

Keywords: equine piroplasmosis; transplacental transmission; PCR; haematological parameters; biochemical reference intervals; foals; Trinidad.