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Controversy about diagnostics and treatment of *Theileria equi* and *Babesia caballi* in neonatal foals born from asymptomatic carrier mares

HERMANS L. ¹, LEBLOND A. ^{1,2}, JOSSON A. ¹, BONSERGENT C. ³, MALANDRIN L. ³

¹ Vetagro Sup, University of Lyon, Marcy l'Étoile, France; ² UMR EPIA, INRAE, VetAgro Sup, University of Lyon, Marcy l'Étoile, France; ³ UMR BIOEPAR, Oniris, INRAE, Nantes, France

Introduction

The occurrence of transplacental transmission of *Theileria equi* and *Babesia caballi* in equids is rarely addressed but it has been described in other species and humans with other species of *Theileria* and *Babesia*. Cases of clinical neonatal piroplasmiasis have been previously described and this raises the question if performing laboratory testing is indicated in foals born from carrier mares and whether infected foals should be treated.

The objectives of this study were to estimate the frequency of transplacental transmission of piroplasmiasis in asymptomatic infected broodmares to their neonatal foals and to observe the development of symptoms in infected neonates.

Materials

Included mares spent more than 6 months/year on pasture, were in the last trimester of gestation and with planned foaling in a box/paddock. Foals born from included mares were included if they were less than 72 hours of age, born in a box or paddock without grass. Consent was given by owners prior to sampling.

Methods

Blood smears were evaluated and nested PCR was performed on all the samples. PCR analyses of foal blood born from piroplasmiasis carrier mares was performed in triplicate.

Results

Seventy-one mares and their foals from 11 different farms were included in this study.

Nested PCR revealed that 25 mares (35.2%) were positive for *T. equi*, and 2 mares (2.8%) were positive for *B. caballi*.

Two foals from *T. equi* carrier mares were positive for *T. equi* (8%, 90% CI [4.7% - 11.3%]) by nested PCR, and none positive for *B. caballi*. All foals from carrier mares were further tested in triplicate, and results were confirmed.

None of the infected mares and foals showed symptoms of equine piroplasmiasis at the time of sampling.

Blood smears from mares (61 out of 71) were examined to evaluate *T. equi* parasitemia. In 6 samples out of 61 (9.8%), *T. equi* was detected at a very low parasitemia (less than 0.1%) and in none *B. caballi*. In one mare the blood smear evaluation was positive although the nested PCR was not able to detect *T. equi*.

In both *T. equi* infected foals, blood smear evaluation revealed presence of *T. equi*.

Conclusion

The preliminary results of this study identified a low prevalence (8%) of transmission of *T. equi* from positive mares to their foals. Transmission of *B. caballi* could not be identified. None of the infected foals developed symptoms of piroplasmiasis which is in agreement with a study reporting carrier mare giving birth to healthy carrier foals. Other reports described cases of clinical piroplasmiasis in neonatal foals, which is in contrast with results from this study. From the results of this study, we can consider that laboratory testing for piroplasmiasis may be indicated in foals born from known carrier mares with symptoms compatible with the disease and in these cases, treatment is indicated. However, data on efficacy and safety of the use of imidocarb in neonatal foals is lacking and caution is warranted. Treatment of infected asymptomatic foals in endemic regions, is likely not recommended.