**INTRODUCTION**

The Pantanal is a large wetland with an area of 140,000 km², located in the center of South America. In the Pantanal some very large ranches (usually over 40,000 ha) have populations of wild horses. The objective of this study was to evaluate the occurrence of equine infectious anemia (EIA) in a population of wild horses in an EIA-endemic region. In this study seropositivity to EIA was 5.6% in wild horses and 34.1% in domestic horses belonging to the same ranch. The observed prevalence rates were 5.7% in wild male horses and 5.3% in wild females. The observed prevalence rate in domestic male horses was 34.1%. Mean ages of domestic seropositive and domestic seronegative horses were 9 and 5.8 years old, respectively. Mean ages of wild seropositive and wild seronegative horses were 3.2 and 1.7 years old, respectively. No sex influence was observed in the wild animals. There was a very significant (P < 0.001) difference between the EIA prevalence in wild and domesticated horses in the studied farm. The hypothesis formulated by the authors is that man had played an important role in the EIA virus transmission to domesticated horses in the Pantanal. On the other hand, in wild populations insect vectors probably played a fundamental role in EIA transmission in the region.

**MATERIALS AND METHODS**

The study was carried out on a 45,000 ha ranch with a herd of about 700 horses, of which 252 only were domesticated. All domesticated and 268 wild horses (268/448) were sampled. The horses were bled from the jugular vein using a vacuum system (Vacuum II, Labnew, Campinas, SP, Brazil). The diagnosis was as swamp fever and is caused by a retrovirus belonging to the lentivirus subfamily that infects members of the Equidae family. EIA causes a persistent infection in horses resulting in periodic episodes of fever, anemia, thrombocytopenia, leukopenia and weight loss. Transmission can be vertical or horizontal by contaminated needles, mothers’ milk and fly bites (5). Blood from persistently infected horses is the major source of EIA virus (EIAV) transmission occurring mechanically either because of man or blood-feeding vectors. The majority of horses infected with the EIA virus did not appear to demonstrate any of the clinical abnormalities listed above, as observed by Foil and Issel (4). EIA prevalence is higher in regions with long vector seasons. In the United States, EIAV infections are commonly observed in the states bordering the Gulf of Mexico, presumably because the semitropical environment favors a long season for blood-feeding vectors that mechanically transmit the EIA virus (4). The aim of this study was to evaluate in an endemic region the occurrence of EIA in a horse population that had no contact with men.

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**Key words**

Horse - Wild animal - Equine infectious anemia - Pantanal - Brazil.

**Summary**

The Pantanal is a large wetland with an area of 140,000 km², located in the center of South America. In the Pantanal some very large ranches (usually over 40,000 ha) have populations of wild horses. The objective of this study was to evaluate the occurrence of equine infectious anemia (EIA) in a population of wild horses in an EIA-endemic region. In this study seropositivity to EIA was 5.6% in wild horses and 34.1% in domestic horses belonging to the same ranch. The observed prevalence rates were 5.7% in wild male horses and 5.3% in wild females. The observed prevalence rate in domestic male horses was 34.1%. Mean ages of domestic seropositive and domestic seronegative horses were 9 and 5.8 years old, respectively. Mean ages of wild seropositive and wild seronegative horses were 3.2 and 1.7 years old, respectively. No sex influence was observed in the wild animals. There was a very significant (P < 0.001) difference between the EIA prevalence in wild and domesticated horses in the studied farm. The hypothesis formulated by the authors is that man had played an important role in the EIA virus transmission to domesticated horses in the Pantanal. On the other hand, in wild populations insect vectors probably played a fundamental role in EIA transmission in the region.
Swamp fever in wild horses in Brazil

RESULTS

In the ranch where the study on EIA in wild horses was carried out seropositivity rates in domesticated and wild horses were 34.1 and 5.6%, respectively. In domesticated males (in this farm only males were domesticated) the observed prevalence rate was 34.1%; The mean ages of seronegative and seropositive horses were 5.8 and 9 years old, respectively. In wild horses the observed prevalence rate was 5.7% in males and 5.3% in females; The mean ages of seronegative and seropositive horses were 1.7 and 3.2 years old, respectively. In wild horses no influence of sex or coat color was observed (P < 0.05). There was a very significant difference (P < 0.001) regarding the prevalence and age of seropositive wild horses compared to those of domesticated horses.

DISCUSSION

According to Issel et al., although man has undoubtedly played an important role in EIAV transmission, the majority of today’s EIA new cases in most developed countries are thought to result from the mechanical transfer of EIAV-infected blood to uninfected horses by hematophagous insects (5). According to Pearson and Knowles, the larger percentage of EIA positive tests in the southern and eastern United States may be due to the prevalence of insect vectors in these regions (7). Tabanids (horseflies, deerflies, clegs) are large telmophagous insects that inflict painful bites and are strong fliers (3). They have been associated with the transmission of over 35 pathogenic agents (6). Barros identified 25 Tabanidae species belonging to 15 genera and three subfamilies in the Pantanal (1). The same author studying the ecology of tabanids in the region observed that the vector season occurs in the first half of the rainy season, from September/October to December/January. However, the tabanids still remain in high numbers until the end of the rainy season. This season could represent the period of major risk of EIA and other blood-transmitted diseases by these insects because they are in abundance and there is a population peak of species with high vector potential, notably Tabanus importunus (8).

CONCLUSION

There was a significant difference between EIA prevalence in wild and domesticated horses on the farm. The hypothesis formulated by the authors is that man played an important role in the EIA virus transmission to domesticated horses by injection (direct role) or by increasing the concentration (density) of domesticated horses, thus, furthering the transmission by arthropods. On the other hand, a lesser density associated with wild horses may explain the discrepancy in the results.
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REFERENCES


Résumé

Anémie infectieuse équine chez des chevaux sauvages au Pantanal, Brésil

Le Pantanal est une grande étendue marécageuse, d’une superficie de 140 000 km² et situé au centre de l’Amérique du Sud. Au Pantanal, quelques très grands propriétés (en général de plus de 40 000 ha) hébergent des populations de chevaux sauvages. Le but de cette étude a été d’évaluer la présence de l’anémie infectieuse équine (AIE) chez une population de chevaux sauvages dans une région d’enzootie de l’AIE. Dans cette étude, la séropositivité pour l’AIE a été de 5,6 p. 100 chez les chevaux sauvages, et de 34,1 p. 100 chez les chevaux domestiques appartenant tous à la même propriété. Les taux de prévalence observés chez les chevaux mâles sauvages ont été de 5,7 p. 100 contre 5,3 p. 100 chez les femelles sauvages. Le taux de prévalence observé chez les chevaux mâles domestiques a été de 34,1 p. 100. L’âge moyen des chevaux domestiques séropositifs a été de 9 ans, alors que celui des chevaux domestiques séronégatifs a été de 5,8 ans. L’âge moyen des chevaux sauvages séropositifs a été de 3,2 ans, mais celui des chevaux sauvages séronégatifs a été de 1,7 an. L’influence du sexe n’a pas été observée chez les animaux sauvages. Il y a eu une différence très significative (P < 0,001) entre la prévalence de l’AIE chez les chevaux domestiques et chez les chevaux sauvages dans la propriété étudiée. Les auteurs émettent l’hypothèse que l’homme a été un acteur important dans la transmission du virus de l’AIE aux chevaux domestiques au Pantanal. Cependant, les insectes vecteurs ont probablement joué un rôle fondamental dans la transmission de l’AIE aux populations de chevaux sauvages dans cette région.