How Significant a Threat is Surra in Horses?

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Surra: General Features

- Non-contagious, infectious disease.
- First described in horses and camels in India in 1880.
- Known geographic distribution: Africa, Asia, Middle East, certain countries in Central and South America.
- Source of considerable economic loss in endemic countries or where the causal agent recently introduced.
Causal agent, a hemoproteozoan parasite, *Trypanosoma evansi*.

First pathogenic trypanosome discovered.

Taxonomically related to *T. equiperdum*, *T. brucei* and *T. congolense*. 
Host Range

- *T. evansi* known to infect various domestic and wildlife spp.

- List includes horses, donkeys, cattle, sheep, goats, buffaloes, camel, llamas, dogs, cats, elephants, capybaras, coatis.

- Disease can severely impact horses and camels.
Modes of Transmission

- Natural transmission by blood-sucking insects and possibly ticks.

- *Tabanus* and *Stomoxys* spp of biting flies primarily implicated.

- Potential for iatrogenic spread via use of blood-contaminated equipment or by transfusion of blood/blood product.
Surra principally seen in areas with tropical/sub-tropical climate.

Disease spread facilitated by:
- presence of large populations of biting flies
- horses congregated together
- introduction of naïve animals into an endemic area

Capybaras and coatis believed reservoir hosts of *T. evansi*. 
Clinical Outcome of *T. evansi* Infection in Horses

- Incubation period 1 – 2 weeks.
- Subacute, acute and chronic forms of infection described.
- Horses, camels more severely affected than other spp.
- High mortality rates can occur in naïve horses in endemic areas.
Clinical Signs in Horses

► **Acute form:** Fever, anemia, depression, weight loss, lethargy, neurologic signs.

► **Chronic form:** Wasting, dependent edema, urticarial lesions ventral abdomen, petechiation on mucous membranes, ataxia, progressive weakness, limb paralysis.

► High abortion rates can occur in naïve pregnant mares.
Diagnosis of *T. evansi* Infection

- Can be problematic due to clinical similarity with certain other diseases.
- Laboratory confirmation of a clinical diagnosis essential.
- Various parasitological, agent detection, serologic and animal inoculation tests available.
- PCR testing is specific, sensitive, but not always reliable in chronic cases of infection.
Treatment of Surra

- Range of trypanocidal drugs available.
- Treatment can mitigate the clinical severity of the disease but not affect clearance of the organism in infected horses.
- Certain drugs can be used prophylactically; efficacy not yet proven.
Prevention and Control

► No vaccine available against Surra.

► Prevention and control very difficult in endemic countries where reservoir hosts are present.

► Control dependent on:
  • identification and treatment of infected animals
  • reduction of vector populations
  • practice of good stable hygiene
  • possible prophylactic use of certain drugs
Summary

► Surra: insidious disease, readily confused clinically with certain other diseases.

► Disease endemic in some Western hemisphere countries.

► Need for continued vigilance to monitor for and ensure the exclusion of Surra from the U.S.

► Hopefully, the U.S. horse population will enjoy continued freedom from this disease.
Brotes de tripanosomosis equina causada por Trypanosoma evansi en Formosa, Argentina

C.M. Monzón, C.B. Hoyos y G.A. Jara *

Resumen: Se estudiaron 257 muestras de sangre procedentes de 21 tropillas de equinos en la Provincia de Formosa, Argentina. Utilizando el método de centrífugación de capilares de microhematócitos, se detectó Trypanosoma evansi en 90 de 137 sueros de estos miembros directa, reveló anticuerpos en 103 de 110 de estos sueros y también anticuerpos específicos para aislamiento del parásito. Las infecciones ocurrieron en la zona periférica de estas regiones se encontraron en (57.000 animales).

Seis cepas de T. evansi de estas infecciones, constituidas por parásitos específicos para aislamiento del parásito (57.000 animales).

PALABRAS CLAVE: Tripanosomosis – Trypanosoma evansi

ACTROP 00424

Investigations on naturally occurring Trypanosoma evansi infections in horses, cattle, dogs and capybaras (Hydrochaeris hydrochaeris) in Pantanal de Poconé (Mato Grosso, Brazil)

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(Oceived 23 July 2008; accepted 26 October 2008)

Ocorrência de Trypanosoma evansi em equinos no município de Cruz Alta, RS, Brasil

Occurrence of Trypanosoma evansi in equines in Cruz Alta, RS, Brazil

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Ciência Rural, Santa Maria, v.38, n.5, p.1468-1471, ago, 2008

ISSN 0103-8478