

## Swamp Fever in Horse: A Brief Overview

Subha Ganguly<sup>1,\*</sup>, Rajesh Wakchaure<sup>2</sup>

<sup>1</sup>Associate Professor, Dept. of Veterinary Microbiology, <sup>2</sup>Associate Professor, Dept. of Animal Genetics & Breeding, Arawali Veterinary College, Sikar, Rajasthan

**\*Corresponding Author:**

Email: ganguly38@gmail.com

### Abstract

Swamp fever also known as equine infectious anemia is a viral disease of horses. The etiology belongs to the family *Retroviridae* and is transmitted by blood sucking insects and mosquitoes. Different strains of the virus have common group specific antigens, but subtypes have different glycoproteins. The disease occurs in Americas, Europe, South Africa and in Middle and far East Russia.

**Keywords:** Horse, Swamp fever, Viral disease

<b>Access this article online</b>
<b>Website:</b> www.innovativepublication.com
<b>DOI:</b> 10.5958/2455-6807.2016.00010.6

### Introduction

The disease is known as Swamp fever, as it mostly occurs in low lying humid and swampy areas where insects are found in large numbers and transmit the disease by biting the horses. EIA is transmitted through milk, blood and body secretions, Horse fly and deer fly aid in the spread of the disease. Vertical transmission of the virus occurs from the mare to its foal via placental route. The infected horses become ill and suffer from high fever.<sup>[1,2]</sup>

### Susceptible hosts

The disease infects the horses in acute, sub-acute and chronic forms.

### Signs and symptoms

The incubation period of the disease is 7-21 days. The symptoms of the disease include recurrent fever, anaemia, jaundice, anorexia, progressive weakness, loss of weight and oedema. Anaemia in EIA is due to immune mediated RBC destruction and bone marrow suppression during febrile stage. The symptoms include anemia, inflammation of lower abdomen and legs, arrhythmia and weak pulse rate. Sudden collapse of the horse occurs in the acute stage. Subacute form of the disease is less severe in nature and the symptoms include fever, weight loss and splenomegaly with anemia and orchitis. In acute and subacute cases, there are haemorrhages and enlargement of spleen, lymph nodes and kidneys. There are petechial haemorrhages on mucous membranes. The chronic form takes a long course which may suddenly relapse to acute or subacute

stage. The horse may be asymptomatic, but still may possess the EIA antibodies in serum.<sup>[1,3]</sup>

### Transmission and epidemiology

The arthropod vectors are tabanids, stable flies and mosquitoes. The disease has been reported in most countries including USA, Central and South America and South Africa. The disease can spread vertically by transplacental infection and horizontally by consumption of colostrums, milk, saliva and urine. EIA virus can also cause abortion in infected mares. During pregnancy the relapse of the fever occurs for which the virus migrates in the circulatory system. The foals born with the mare carrying the infection are generally not infected with EIA. Research have proved that certain breeds of horses remain immune to EIA infection.<sup>[4]</sup>

### Pathophysiology

There is decrease in blood platelets, packed cell volume and RBC count. Tissue macrophages and other cells carry the virus. Cell associated viraemia persists during the entire course of disease which continues lifelong. This is due to successive antigenic variations in the virus and due to non-neutralization of existing antibodies. The virus has a number of immunologically distinct strains. Some animals develop chronic disease showing only mild symptoms. There is infection of lymphocytes which may have degenerative or proliferative responses.<sup>[5,6]</sup>

### Diagnosis

Isolation of the virus can be made by citrated blood, serum or leukocytes of infected horses in primary leukocyte cultures. The disease can be diagnosed by history, clinical symptoms, examination of blood and pathological lesions. Antibodies in the infected animals may be detected by Coggin's test (gel diffusion test) with known virus. Another reliable test is by inoculation of serum or whole blood from infected

horse to uninfected susceptible host. The virus and antibody exist simultaneously in EIA cases.<sup>[1,7]</sup>

### References

1. Malik, B.S. and Malik, M. *Objective and Short Answer Questions in Veterinary Virology*. 2<sup>nd</sup> ed. CBS Publishers and Distributors, New Delhi, India, pp. 215-216.
2. Equine Infectious Anemia: Introduction. *The Merck Veterinary Manual*, 2006. Retrieved 2007-06-23.
3. Equine Infectious Anemia (EIA), *North Carolina Department of Agriculture and Consumer Services*. Retrieved December 19, 2008.
4. Agricultural Biological Diversity, *Convention on Biological Diversity*. Referenced August 12, 2008.
5. Silva, R.A.M.S., De Abreu, U.G.P., Dávila, A.M.R. and Ramirez, L. (1999). Swamp fever in wild horses from the Pantanal, Brazil. *Revue d'élevage et de médecine vétérinaire des pays tropicaux*, 52(2):99–101.
6. Craigo, J.K., Li, F., Steckbeck, J.D., Durkin, S., Howe, L., Cook, S.J., Issel, C. and Montelaro, R.C. (2005). Discerning an effective balance between equine infectious anemia virus attenuation and vaccine efficacy. *J. Virol.*, 79 (5):2666–77. doi:10.1128/JVI.79.5.2666-2677.2005.
7. <http://www.eiahorses.org>.

**How to cite this article:** Ganguly S, Wakchaure R. Swamp Fever in Horse: A Brief Overview. *International Journal of Medical Microbiology and Tropical Diseases* 2016;2(3):79-80.