

## Equine Herpes Virus

There are many different types of equine herpes virus, the ones that affect the domestic horse are EHV-1, EHV-2, EHV-3, EHV-4, EHV-5.

**EHV-1** and **EHV-4** are clinically significant and are most likely to cause disease in the horse.

EHV-1 (equine rhinopneumonitis virus) causes abortion, respiratory disease, neurological disease.

EHV- 4 causes respiratory disease only and is especially prevalent in young stock.

This common virus has the ability to remain in a latent (hidden) form within horses and re-emerge (become active) without warning to cause clinical problems. This is a similar phenomenon seen with herpes simplex virus in humans which periodically re-emerge to cause 'cold sores' in some people. As with herpes simplex virus, the re-emergence of EHV-1 is seemingly variable between individuals and may occur in a variety of stressful situations, including with travelling and mixing of horses.



### **Clinical findings:**

Equine Herpes virus has an incubation period of 2-10 days, after which susceptible horses can develop a fever, serous nasal discharge, malaise, pharyngitis, a cough and/or enlarged submandibular and retropharyngeal lymph nodes.

Pregnant Mares that abort after EHV -1 infection rarely show symptoms, abortion typically occurs 2- 12 weeks after infection and usually in months 7 – 11 of pregnancy. Mares exposed late in pregnancy may not abort but will give birth to sick foals, which usually die within hours or days.

The neurological form of the disease, Equine Herpes Myeloencephalopathy (EHM) is for many people the most concerning aspect of the disease particularly as older horses appear more susceptible. Typically



around 10% of infected horses develop neurological signs during herpes outbreaks (although this figure is highly variable), generally it requires a viraemia and is caused by specific strains of EHV-1. Neurological signs vary from mild incoordination to severe hindlimb paralysis and recumbency. Prognosis depends of severity of clinical signs and length of time in recumbency.

### **Diagnosis:**

The respiratory form of Herpes can be difficult to differentiate from other respiratory infections such as equine influenza. Diagnosis can be made with PCR or virus isolation, from a nasopharyngeal swab or a blood sample, and in cases of abortion from placental and foetal tissue.

### **Treatment:**

There is no specific treatment for herpes virus. Treatment is largely supportive and can include fluid therapy and antibiotics to control secondary infections.

### **Key Points to consider when vaccinating against Herpes:**

- Horses that have not undergone previous vaccination with herpes should undergo a primary course of two vaccinations 4-6 weeks apart. Boosters are then given at 6 monthly intervals. To reduce abortion due to EHV-1 infection, pregnant mares should be vaccinated during the 5th, 7th and 9th month of pregnancy.
- The UK vaccine is licensed to reduce the clinical signs due to infection with Equine Herpes 1 and 4 and to reduce abortion caused by EHV-1 infection. Like most vaccinations it cannot guarantee that the horse will not become infected by the virus but should this be the case if the immune system has been correctly primed it is hoped that any clinical symptoms or manifestations of the disease would be reduced. Due to a lack of clinical data the manufacturers are unable to make claims as to its efficacy against the neurological form of the disease. In any animal population there will be a small number of individuals which fail to respond fully to vaccination.
- There is a current consensus amongst many vets that by vaccinating horses we should be able to effectively reduce the amount of the respiratory viral shedding and therefore limit the spread of the disease. For this reason to reduce viral shedding the recommendation is to vaccinate as many of the horse within a yard or herd as possible. Also it is known that vaccination can reduce the likelihood and degree of the viraemia of infected horses (ie the amount of circulating virus in the blood stream) this in turn it is hoped should be able to reduce the likelihood of the neurological form of the disease. Given the presumed similar disease process between EHV-1 abortion and the neurological form of the disease we feel there are likely to be parallel in terms of their response to vaccination.
- No information is available on the compatibility of the herpes vaccine and any other vaccines eg Influenza and tetanus vaccinations. Therefore the safety and efficacy of this product when used with any



other has not been demonstrated. We would therefore suggest where practical to avoid vaccinating at the same time as the influenza and or tetanus vaccination. While safety issues appear extremely rare the concern is that the horse might have a less than optimal immune response if being challenged by too many antigens at once resulting in slightly poorer immunity against the vaccinated diseases.

- A potential disadvantage of vaccinating is that should the horse become sick and subsequently be found to have a high antibody titre to herpes it may not be possible to differentiate from a simple blood test whether the high antibody level is the result of a current infection or a recent previous vaccination.
- Appropriate biosecurity is extremely important as with any of the infectious diseases. Vaccination should not be used to justify a lack of other good biosecurity measures.
- Due to the endemic nature of Herpes virus it is likely there will continue to be sporadic outbreaks as there have been in the past. The spread of disease tends to be slower than some other respiratory infectious disease and so assuming good biosecurity measures are in place outbreaks can often be well managed.