

Equine Herpes Virus Abortion

KEY POINTS

- Equine herpes virus is a common virus that occurs worldwide and can cause abortion, fever, respiratory disease and neurological disease.
- Five strains of EHV affect domestic horses, of which EHV-1 and EHV-4 can cause abortion
- EHV-1 can cause 'abortion storms', whereas EHV-4 causes isolated abortions and is not considered an important contagious risk for abortion

TRANSMISSION

The most common route of transmission is via inhalation of aerosolized droplets. EHV can only travel up to 50m as an aerosol, and can survive in the environment for up to one month. It may also be transmitted indirectly via 'fomites' (anything that contacts one horse and then another e.g. grooming kit, water buckets) and personnel.

Respiratory infections are easily transmitted via the respiratory route – an infectious horse produces aerosolized virus when it coughs or snorts, and the infectious particles may be directly inhaled by other horses and will contaminate the local environment

Mares that have aborted due to EHV infection release large volumes of virus into the environment via the foetus and foetal membranes and fluids. The mare may also transmit EHV via the respiratory route and genital tract. The management of an abortion is critical in the prevention of an outbreak of disease.

Once infected, many horses develop a latent (or silent) infection – the virus becomes re-activated at times of stress or immunosuppression (e.g. pregnancy, transport, moving premises). Latently infected animals serve as a reservoir of the virus.

CLINICAL SIGNS

Abortion

EHV abortion is usually sudden and unexpected, with no warning signs. It may occur from two weeks to several months following infection or re-activation of latent infection, and most commonly occurs during late pregnancy (8 months +). EHV-1 may cause outbreaks of disease ("abortion storms"), however EHV-4 causes isolated abortions and is not considered a contagious risk.

Some foals may be born alive despite infection in utero – but they are usually abnormal from birth and may show signs of weakness, jaundice, difficulty in breathing and neurological signs.



Jaundiced foal: marked yellow discolouration of this foal's tissues is a hallmark of EHV infection.

These signs reflect the widespread nature of the infection involving the placenta and the foal's tissues. These foals normally die or require euthanasia within 3 days of birth.

Respiratory disease

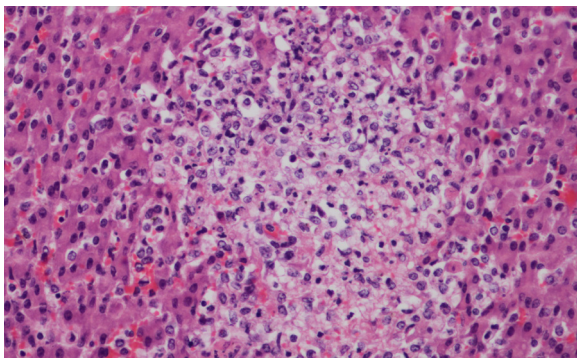
Weaned foals and yearlings are most commonly affected by respiratory disease caused by EHV, signs of which include mild fever, coughing and nasal discharge. Older horses may also be affected, and are more likely to transmit the disease without showing any clinical signs.

Neurological disease

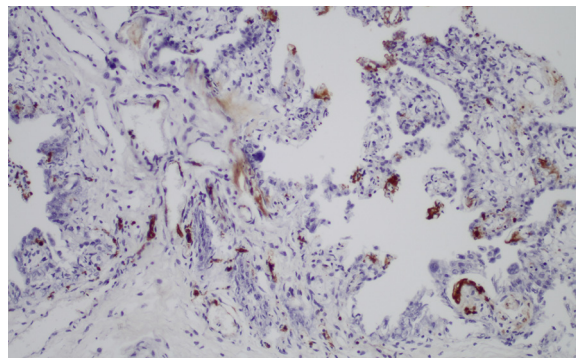
Paralytic EHV can cause incoordination of limbs, urine and/or faecal retention and recumbency. As with abortion, neurological signs may be sudden and unexpected, with no warning signs.

DIAGNOSIS

EHV can only be definitively diagnosed at suitably equipped veterinary laboratories. When suspicious of disease, a veterinary surgeon will submit appropriate samples. In the case of abortion this will include the whole foetus/foal carcass and foetal membranes. The introduction of modern PCR techniques has transformed this process, where in the past it would take several days to get an answer, now, the qPCR test can be run in a matter of hours and this allows biosecurity measures to be put in place very promptly.



Liver pathology: EHV1 infection has severely damaged the liver tissue.



Placenta pathology: EHV1 particles are stained brown in this sample of an infected placenta.



qPCR analyser: the qPCR test can be run in a matter of hours and this allows biosecurity measures to be put in place very promptly.

TREATMENT

There are no specific treatments currently available for EHV abortion which has happened before it can be prevented although in sick foals and neurological horses, the anti-viral drug valacyclovir can be helpful. Good management and vaccination are always to be recommended as the cost of prevention is likely to be far lower than the cost of the control of an outbreak.

CONTROL OF INFECTION

Recommendations for how to manage EHV abortion on stud farms are available in the HBLB Codes of Practice for Equine Breeders (<http://codes.hblb.org.uk/>). When EHV is suspected after an abortion or early foal death, veterinary advice should be sought immediately. To avoid contamination of the environment, the mare should be placed into strict isolation and the foetus/carcass and foetal membranes should be placed in sealed, leakproof containers. Any staff handling the mare should have contact with no other horses. All bedding should be destroyed and the stable and any in-contact equipment should be disinfected. Unless it is confirmed that EHV has not caused the abortion, movements of stock on and off the premises should be stopped.

Communication is very important in cases of EHV - the stud or owner of the affected horse has a duty to inform the relevant national breeders association and the owners of all mares at the stud. It is also important to notify the owners of mares due to arrive at the stud and those of mares that have departed from the stud within 28 days. EHV is not a notifiable disease by law - however, horses that show clinical signs or have been in recent contact with the disease should not be exported.

PREVENTION

Good stud management is essential in the prevention of EHV.

- Pregnant mares should be kept separate from all other stock (e.g. yearlings, horses out of training). They should be at pasture as much as possible to reduce the chance of airborne exposure, and should be kept in small groups with similar due dates.
- To reduce the risk of re-activation of latent infection, pregnant mares should not be subjected to stress (e.g. periods of travel, moving premises).
- Horses arriving from sales yards and from overseas are a higher risk and should be kept in isolation away from all other stock, as should foster mares (if the cause of foal death is unknown).
- Stallions should be housed in separate premises where possible, with their own dedicated staff and strict biosecurity.

It is not known exactly how long EHV can survive in the environment, but it is likely that it is at least one month and it is easily transmitted by personnel and equipment, meaning good hygiene is vital.

- The virus is easily destroyed by heat and contact with virucidal disinfectants. Stables,

stable equipment and vehicles should always be steam cleaned and disinfected between horses.

- Where possible, separate staff should deal with different groups of horses – where this is not possible, pregnant mares should always be handled first.
- Foaling staff should ideally wear disposable gloves and overalls for each foaling, which should be disposed of safely afterwards.
- It is important for every member of staff to appreciate how the risks of spreading EHV – personal hygiene (hand washing/alcohol sprays) are as important as all other aspects of management.

VACCINATION

Vaccination raises the level of protection against EHV in a population. It will not prevent abortion in individual horses due to the nature of the virus, however research has shown that vaccination can help to prevent 'abortion storms' from occurring.

Every horse on a stud farm should be fully vaccinated against EHV-1 and EHV-4 with a primary course followed by 6-monthly boosters. In addition, all pregnant mares should receive boosters at 5, 7 and 9 months of pregnancy.