VIRAL ARTERITIS

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Equine viral arteritis (EVA) is a contagious viral infection affecting both mares and stallions. Breed prevalence of EVA ranges from 1 to 3% in Quarter Horses, Arabians and Thoroughbreds to 70 to 80% in Standard-breds. Horses clinically affected with EVA may exhibit fever, limb edema, anorexia, depression, inflammation around the eyes, nasal discharge, skin rash and abortion in pregnant mares. The significance of EVA infection is that certain strains can cause abortion in susceptible mares and a carrier state develops in 30 to 60% of infected stallions. Carrier stallions can transmit the virus by natural breeding or via artificial insemination with fresh, cooled-transported or frozen semen. Mares bred with EVA infected semen may spread the infection, which may lead to outbreaks of abortion and deaths in neonatal foals. Consequently, determination of the exposure status of mares and stallions and detection of the carrier state in breeding stallions is critically important for successful management of this disease. Equine arteritis virus (EAV) is responsible for major restrictions in the international movement of horses and semen.

Serologic or blood testing is used as a screening test on both mares and stallions. Serum samples are used to detect natural exposure to the virus or vaccination status. Detectable antibody titers develop 2 to 4 weeks following exposure, are maximal at 2 to 4 months and remain stable for several years. A single blood sample is submitted to a diagnostic laboratory for determination of antibody titers.

If a stallion is serologically positive, the presence or absence of virus in his semen should be determined to confirm if he is a chronic carrier or shedder of the virus. A semen sample is collected and shipped to a diagnostic laboratory. If a delay is anticipated in submitting the semen specimen for testing, the semen may be frozen at or below $-20^{o}C$ before being dispatched to the laboratory. Freezing will not interfere with the successful isolation of EAV from the semen of a carrier stallion.

Mares, geldings and sexually immature colts do not become persistently infected. The carrier state has only been documented in adult stallions. It should be emphasized that not all seropositive stallions are shedders and carriers of the virus.

Persistent infections in stallions have considerable economic impact with respect to breeding. The virus localizes in the accessory sex glands (primarily the ampullae of the vas deferens) and carrier stallions shed virus constantly in their semen. Carrier stallions do not have a reduction in fertility and unvaccinated mares bred with

EAV infected semen may spread the virus to other susceptible horses. Carrier stallions should only be bred to mares seropositive as a result of previous natural infection or vaccination.

A safe, effective modified-live vaccine (ARVAC®, Ft. Dodge Animal Health, Ft. Dodge, IA) is available. Consult with your veterinarian for the recommended protocol for vaccination of mares prior to breeding to a known carrier stallion. Vaccination results in antibody development and protection from disease, abortion in mares and development of persistent infection in stallions. The presence of EVA antibodies in blood (i.e. serum positive status) may preclude importation or exportation of horses and/or semen even though the antibody development was due to documented vaccination and not natural exposure. Unfortunately, as a consequence, owners should carefully consider potential future ramifications as regards international shipment prior to vaccination.

Testing all stallions for serologic status and presence of virus in semen, vaccinating all seronegative stallions and breeding seropositive, carrier stallions to only vaccinated mares would eventually result in effective management of this disease.