Viral Encephalitides

A PowerPage Presented By

VetPrep
vetprep.com

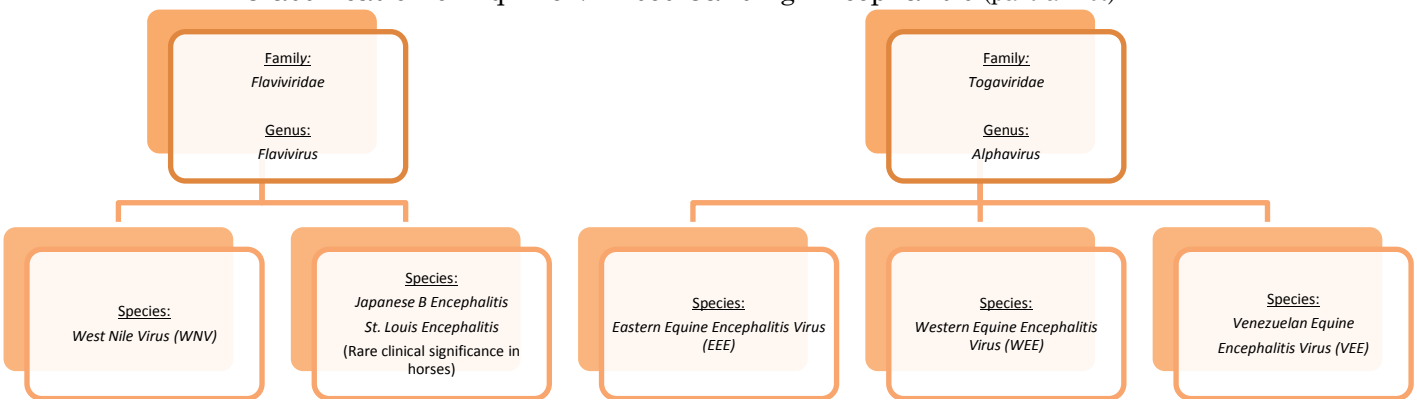
Numerous viruses can cause equine encephalitis. The most recently emphasized and perhaps most relevant virus for the purposes of the board examination is West Nile Virus (WNV). Other viruses associated with encephalopathy include Eastern (EEE), Western (WEE), and Venezuelan (VEE) Equine Encephalitis. Distinguishing features of viral encephalitis include mental depression and possible detection of fever.

Key Points

- Various ages affected
- Prevention via vaccination
- Mental depression
- CSF may have high cell count and/or high protein
  - Specific test to identify virus or body's response to virus may be available
- Treatment is generally supportive
- May be seasonal in temperate climates (June-November in US)

Viral Encephalitides Overview

Classification of Equine Viruses Causing Encephalitis (partial list)



West Nile Virus

Introduction:

- WNV is a one of the recent leading causes of human and equine viral encephalitis since the US outbreak in 1999
- Infection in horses is initiated by the bite of a WNV-infected mosquito, possibly resulting in a low magnitude viremia, typically of short duration
- The enzootic cycle of WNV involves transmission of the virus between birds and infected mosquitoes

Clinical Signs:
- Not all horses infected with WNV develop clinical signs of disease
- Horses that are vaccinated against WNV demonstrate reduced, if any, clinical manifestations
- Those that do develop clinical signs may commonly demonstrate depressed mental state, ataxia, weakness, muscle fasciculations, fever and recumbency

Diagnosis:
- Suspected based on clinical signs and supported by abnormal findings in CSF such as elevated protein concentration and mononuclear pleocytosis
- Confirmation of WNV infection includes antigen (IgM) capture ELISA, virus isolation and plaque reduction neutralization

Treatment:
- Supportive care including anti-inflammatory medications and fluid therapy

Prognosis:
- Variable, with many horses recovering from WNV infection
- One investigation reported a mortality rate of 33%

Togaviral Encephalitides

Togaviridae persist in infected, but asymptomatic, wild animals such as birds and small mammals. Different species of biting insects (i.e. mosquitoes) serve as vectors and may, in part, be related to the viral distribution. Vector transmission is the most important route that infection spreads.

Clinical Signs:
Most profound in non-vaccinated horses and include fever, anorexia, depression, somnolence (sleeping sickness) to hyperesthesia, proprioceptive deficits, recumbency and cerebral/cranial nerve signs (head pressing, propulsive walking, circling, head tilt).

Diagnosis:
- Clinical signs
- Abnormal CSF findings (elevated CSF protein and cell count)
- Definitive diagnosis based on serology or necropsy evaluation

Treatment:
- Primarily supportive and includes anti-inflammatory medications and fluid therapy

Prognosis:
- EEE has a high mortality rate (75-100%) whereas WEE (20-50%) and VEE (40-80%) are lower
- Residual neurologic deficits may be present in horses that do recover