

RISK FACTORS ASSOCIATED WITH EQUINE PROTOZOAL MYELOENCEPHALITIS

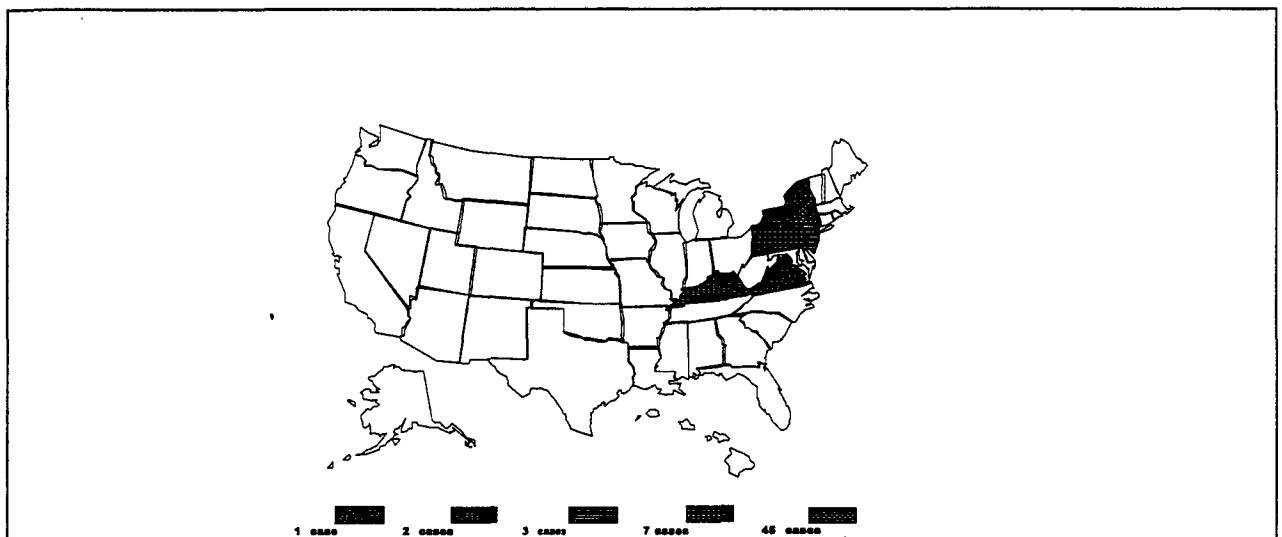
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Equine protozoal myeloencephalitis (EPM) is one of the most frequently encountered causes of neurological disease in horses of North America. The antemortem diagnoses is generally based on clinical signs; however, an immunoblot analysis of suspected cerebrospinal fluid (CSF) and serum is recently been adopted as a diagnostic test. We carried out studies to determine the accuracy of immunoblot analyses of CSF and serum as antemortem diagnostic tests for EPM and to examine the role of potential intrinsic risk factors on the likelihood of the disease. Both CSF and serum immunoblot had sensitivities above 90%, however, the specificities were not as high and varied between the two tests. There was variation in the risk of EPM among different breeds of horses. There was also an age predisposition to the risk of EPM.

Figure 1 shows the distribution of EPM cases in the study. The majority of the cases were from New York State. Both CSF and serum immunoblot had sensitivities above 90%, however, the specificities were not as high and varied between the two tests. There was variation in the risk of EPM among different breeds of horses. There was also an age predisposition to the risk of EPM. Recently, molecular genetic evidence has indicated that the species originally described from the horse as *Sarcocystis neurona* is likely to be the same as a species previously described as *Sarcocystis falcatula*. *S. falcatula* is a parasite that cycles between muscle stages in avian hosts, grackles, cowbirds, etc., and the Virginia opossum (*Didelphis virginiana*). From this information, it can be deduced that the source of equine infections is a stage shed in the feces of opossums.

There are several means by which horses might be protected from disease due to infection with *S. falcatula*. (1) The removal of the EPM organism through the eradication of the opossum or avian hosts. This would be an unacceptable program at any level except at a highly managed local level. Although individual horse owners might be able to prevent the access of all opossums or even all wild birds, this could not be performed on a national level. (2) The eradication of the EPM organism might also be brought about by baiting opossums with either a drug or a vaccine that would prevent sporocyst shedding. Neither drug nor vaccine currently exist, and if they did, the cost of their administration would be unacceptably high. (3) The administration of pharmaceutical products to horses that would prevent the development of EPM organisms within the tissues is another potential means of protection. However, there are currently no products that have this function that are designed to be administered to horses on a continuous and frequent basis.

Figure 1
The distribution of EPM cases Diagnosed at Cornell University Veterinary Hospital between 1992 to 1996



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