Is Equine Infectious Anemia (EIA) Still a Threat?

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EIA is still clearly a threat; however the threat is less than in the 1970s. The overall percentage of EIA positive horses among those tested in the United States decreased from near 4% in 1972 to <0.01% in 2005. Prior to the mid-1990s, 92% of the positive horses were in a “hot zone” (see illustration) of states that included the South (including Texas and Oklahoma) and parts of the Midwest. Since the mid 1990s there have been clusters of EIA occurring in states outside the hot zone that can be seen on the website, which contains complete data and maps on EIA testing in the United States from 1972 to 2007. Notable increases in positive horses outside the hot zone states include those in Nevada in 2003; South Dakota in 2001; Utah in 2000; North Dakota in 1999; Utah, Oregon and Indiana in 1998; South Dakota in 1997; Idaho in 1996; and New York and Michigan in 1995. For 2006, the percent positive horses among those tested varied by state from zero in 27 states to 0.048% in Mississippi where 20 of 41,331 samples were positive. It seems that infected horses in the hot zone states continue transmission and that sometimes transmission occurs in states outside the hot zone. Infections in the states inside and outside the hot zone are due to transmission from infected horses, although the sources of the infected horses are not always known.

A documented outbreak of EIA outside the United States demonstrates the threat of an infected horse. On June 15, 2006, the first case of EIA was reported in the Republic of Ireland and by November 14, 2006, the number of cases in the Republic of Ireland was 26. All the 26 cases appeared to be epidemiologically linked. In August of 2006 the first case of EIA occurred in Northern Ireland and the case was epidemiologically linked to the outbreak in the Republic of Ireland. The source of the outbreak in the Republic of Ireland was thought to be due to the use of an unauthorized veterinary medical product. Regardless of the source of the initial infection with EIA virus, there was transmission to other horses. In this outbreak, the first horse infected was documented to be a threat to other horses.

Transmission of EIA from an infected horse usually occurs by blood transfer to a non-infected horse. Blood transfer and transmission occurs naturally by biting insects such as horseflies and deerflies following interrupted feeding on an infected horse. Blood transfer and transmission also occurs from the use of blood-contaminated needles and equipment. Transmission with other body fluids may occur. Recent quantification of EIA virus RNA by RT-PCR demonstrated significant RNA copies in nasal, buccal and genital secretions obtained from swabs; however, the quantities were always less than in plasma. Transmission from horses in the carrier-state with low-level viremia is much less probable than from an acute case with high-level viremia. The practical problem in EIA control and in determining the threat from a particular EIA-infected horse is distinguishing whether the infected horse has a high- or low-level viremia. Further, depending on the horse and the duration of infection, periods of low-level viremia are interrupted with episodes of high-level viremia increasing the potential for transmission.