



Anthrax in Horses

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Introduction

Bacillus anthracis, or anthrax, was one of the first diseases known to cause mortality in herbivores, until Pasteur developed a vaccine in 1881. The anthrax bacterium is a large, gram-positive rod that can survive both aerobically and anaerobically. *Bacillus anthracis* is capable of survival in the soil for decades due to low nutrient requirements and ability to survive temperature extremes. The bacteria has preference for alkaline soil conditions. Horses are less susceptible to anthrax than cattle and sheep, mostly likely due to their differences in the digestive system. Horses become infected with anthrax either through ingestion, inhalation or skin penetration by biting flies or injury, especially when animals are exposed to soil or carcasses of infected animals. All cases of anthrax, either suspected or confirmed, must be reported to the state veterinarian.

Epidemiology

Lack of diagnosis and unreliable reporting make it difficult to estimate the real incidence of anthrax worldwide and in the United States. However, outbreaks of anthrax have been reported after drought, flooding, or soil disturbance. In the United States, the highest frequency of animals infected with anthrax is in the Midwest and West. Anthrax is enzootic in west Texas and northwest Minnesota; sporadic in south Texas, Nevada, eastern North and South Dakota; and only occasionally seen in the other states.

Clinical Signs

Clinical signs of an animal infected with anthrax include fever, muscle tremors, dyspnea (laborious breathing), colic, bloody diarrhea, followed by death. Following death, a discharge of blood can be seen from the nostrils, mouth, anus and vulva. The carcass decomposes quickly. Abortions can occur in pregnant mares, and blood-stained milk may be seen in lactating mares with anthrax.

Diagnosis and Treatment

Diagnosis of anthrax can be determined by blood test, although rarely done due to the high incidence of mortality of infected animals. Therefore, diagnosis generally occurs post-mortem. Treatment is unlikely due to the rapid progression of the disease. Other animals that have been in the same location as the infected animal should be carefully monitored for symptoms and administered antibiotics, if necessary.

Vaccination

The vaccine currently licensed for use in horses in the United States is a live vaccine that is indicated only for horses pastured in endemic areas. This vaccine is not readily available everywhere in the United States, as the disease has only occurred in certain areas. The vaccine should not be administered concurrently with antibiotics and should not be administered to pregnant mares. In Kentucky, as of 2010, vaccinating resident horses against anthrax is not recommended.

References

Center for Disease Control and Prevention: <http://emergency.cdc.gov/agent/anthrax/>.

The Center for Food Security and Public Health, Iowa State University: <http://www.cfsph.iastate.edu/Factsheets/pdfs/anthrax.pdf>.

The Merck Veterinary Manual: (<http://www.merck-vetmanual.com/mvm/index.jsp?cfile=htm/bc/50400.htm>).

American Association of Equine Practitioners: http://www.aaep.org/images/files/anthrax_map.pdf.