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Epidemiology of *Listeria monocytogenes* in animals diagnosed at the Minnesota Veterinary Diagnostic Laboratory, 2001-2005.

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Background. *Listeria monocytogenes* causes clinical illness in humans and ruminants. Human cases are characterized by meningitis, encephalitis, septicemia, or intrauterine infection resulting in abortions. Similarly, a number of farm animal species can develop septicemia, encephalitis, or intrauterine infection resulting in abortion. Recently, we wanted to explore a possible increase in farm animals diagnosed with listeriosis at the Veterinary Diagnostic Laboratory (VDL). An assessment of the frequency, type of species, and county distribution are described. Molecular subtyping was done to compare similarities between animal isolates and human isolates from 2002-2005.

Methods. All animals recently diagnosed with clinical listeriosis were identified through veterinary diagnostic laboratory records. Data collected include animal species, date of clinical illness, location, number of other animals affected, and potential source of infection. Cases were defined as confirmed if *Listeria monocytogenes* was cultured from clinical specimens or by immunohistochemical techniques. Suspect cases were defined as clinically compatible with supportive histological evidence. Available isolates were subtyped at the Minnesota Department of Health and compared to an existing library of human *L. monocytogenes* isolate patterns.

Results. Sixty-four animal *Listeria* cases and 30 suspect cases were identified from the VDL records from 2001 through 2005. The annual median number of suspect and confirmed cases was 18, ranging from 11 to 29. Seventy-four (80%) of 93 confirmed and suspect cases were cattle. Other species included caprine (n=6), ovine (n=6), cervid (n=3), and 3 other species. Farms experienced a varied impact of the disease with 1 to 4 reported deaths per farm and 0 and 6 additional sick animals. Cases were found in eastern and south-eastern counties of MN mainly between the months of January and May. There were 34 human cases and 4 deaths during this same period. Thirty-eight animal isolates were available for serotyping and subtyping; 28 were MN case isolates. Five different serotypes were identified: 1, 4, 1/2a, 1/2b, and 4b. Diverse subtype patterns were observed with 25 different patterns from the 28 isolates. Indistinguishable subtype patterns were observed from animal and human sources.

Conclusions. *Listeria* cases were identified predominately in cattle. There was a marked heterogeneity of isolates likely reflecting diverse sources of infection. Indistinguishable subtypes were found in humans and animals signifying a common source of infection. Cases were usually part of a larger farm outbreak. Veterinarians should be aware that a positive case may require a review of feed management and husbandry practices to prevent additional cases.