



Canine Influenza Virus Detected in Dogs in New York State

The Animal Health Diagnostic Center at Cornell has conclusive evidence that canine influenza virus is now present in the New York City area. Reports have been received indicating that an unusual form of "kennel cough" has been seen in a number of veterinary practices. Animals recovering from this clinical presentation that have been tested are all serologically positive for canine influenza virus. Acute and convalescent sera from several dogs showed a positive response to canine influenza virus over the course of the illness. Tests of selected New York State dogs last year were all negative.

Canine influenza virus is a relatively new pathogen of dogs. It was first identified in racing greyhounds in 2004 and this virus appears to have been involved with significant respiratory problems on the dog tracks throughout the U.S. for the last 2-3 years. The Virology Lab at Cornell isolated the first influenza virus from an animal that died during one of these clinical episodes. Evidence of infection of non-greyhounds by influenza virus has been found in Florida this spring as part of the ongoing research efforts by Dr. Cynda Crawford at the University of Florida on respiratory disease in dogs. We confirmed this finding using samples from an animal shelter in the Miami area.

As this virus is a new pathogen of dogs, all dogs are potentially susceptible to infection. As with any disease, there is variability in the clinical signs and the eventual outcome of the infection. The most common sign is a cough that can persist for up to three weeks regardless of treatment. Dogs may have a purulent nasal discharge that seems to resolve with antibiotic treatment. This suggests that secondary bacterial infections are a common component of the clinical presentation. More severely affected dogs exhibit a high fever (104-106) with increased respiratory rates and other clinical signs of pneumonia. Again antibiotic therapy seems essential for recovery. Some fatal cases of pneumonia have been reported but the rate is probably below 5%.

While it may be difficult to differentiate canine influenza virus infections from traditional kennel cough agents for an individual dog, the situation in groups of dogs is more distinct. As mentioned earlier, virtually all dogs are susceptible regardless of age or vaccination history. Infection rates in kennels may reach 100% with clinical signs in 75% of dogs. The incubation period is relatively short, in the 2-5 day range.

The diagnosis of a canine influenza infection at this time is most reliably done by detecting antibodies to the virus. Since this is a new infection in dogs, there are no background titers due to vaccines or previous exposures. Acute and convalescent serum samples should be collected and submitted to the AHDC. A single serum sample on dogs that have recovered from a respiratory infection can also be submitted, but in this case the test results will only determine previous exposure to canine influenza. Commercial antigen-capture ELISA tests have not been useful in detecting the virus. Virus detection either by virus isolation or PCR using pharyngeal swabs has also been unsuccessful. The reason for this is unclear, but could be due to the time and location of collection, which in most instances are several days after clinical signs have appeared. Collection of an pharyngeal (not nasal) swab or tracheal wash samples on febrile dogs very early in the course of the disease may increase chances of identifying the virus. Tissues from dogs that have died acutely with respiratory signs should be submitted for virus isolation (ship overnight on cold packs).

Released September 29, 2005