

Leptospirosis

Overview

Leptospirosis is a bacterial infection caused by spiral-shaped bacteria called leptospire. There are over 200 strains, or serovars, worldwide. This bacteria can infect many domestic and wild animals, and can also infect humans. The bacteria are passed in the urine of an infected animal – transmission occurs when another animal or human has contact with water or soil contaminated with that urine. The bacteria can enter the body through the mucous membranes (eyes, nose, or mouth) or exposure to broken skin (scratch or cut). Common activities for potential exposure include drinking contaminated water, walking through or swimming in contaminated water. Once infected, animals may continue to shed the bacteria in their urine for months or years. The infection infrequently passes directly from animal to animal. Infection is seen most often in dogs and livestock; cats are rarely infected. It has been thought that dogs that are in rural areas have an increased risk because of exposure to livestock, wildlife and access to streams and ponds, however, raccoons, rats and skunks have brought this disease into urban areas as well.

It is important to note that while a pet or person may have exposure to *Leptospira*, only 10-15% may show any clinical signs of disease. The onset of symptoms is typically 5-14 days after exposure.

Clinical Signs

The most common clinical signs of Leptospirosis in dogs are:

- fever
- depression and lethargy, muscle pain
- decreased appetite
- excessive thirst
- vomiting
- jaundice (yellowing of the skin)
- excessive bleeding

The *Leptospira* bacteria most commonly cause kidney damage, leading to acute kidney failure, and liver damage. There is also the potential for bleeding disorders and pneumonia.

Treatment

Leptospirosis can be rapidly fatal even with antibiotics and other intensive treatment, so early intervention is critical. Even if improvement of clinical signs is seen with treatment, there can be permanent damage to the kidneys and liver. The antibiotic of choice for treating Leptospirosis is Doxycycline. Doxycycline can sometimes cause gastrointestinal upset (vomiting, diarrhea, or decreased appetite), otherwise it is quite safe.

Amherst Animal Hospital
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92 Route 101A, Amherst, NH
(603) 889-5442

Prevention

1. A vaccine is available but only provides protection for 4 serovars. In the United States, there are several other serovars that cause Leptospirosis, and thus vaccination is not fully protective. As with other vaccines, the vaccines for Leptospirosis can cause reactions including facial swelling, hives, vomiting and potentially serious systemic anaphylactic reactions. These reactions are more common in small breed dogs receiving numerous vaccines at the same time.
2. There are also concerns in the veterinary profession about duration of immunity and whether the vaccine provides protection for a full year.
3. It is also important to recognize the incidence of exposure and disease in our area. Some areas of the US have a higher incidence, including the Michigan area and Hawaii. Some studies suggest that the Northeast has more cases, but the data is limited. In our practice, we have had 2 confirmed cases in the past 15 years.

Testing

As there are many animals that have been exposed but are not ill, confirming a diagnosis of Leptospirosis can be difficult. The organism can be identified by PCR, in urine or blood of an actively infected animal. Alternatively, antibody titers can be measured. A dog that has been vaccinated, or a dog that has been exposed previously but never ill, will have positive antibody levels. Active disease is confirmed if the antibody levels increase 4-fold over a 2-3 week period.

Our Recommendations

Due to limitations in vaccination protection, we removed the Leptospirosis portion from the core DHPP vaccine over 12 years ago and have not seen an increase in patients with this disease. We do have the vaccine available separately for clients who request that their dogs be vaccinated. The initial series is 2 injections given 2-3 weeks apart; the vaccine is boosted annually thereafter.

Our veterinarians and technicians are happy to answer any questions you have regarding this information or about your pet. We can be contacted by telephone at (603) 889-5442 or by email at Staff@AmherstAnimalHospital.com.

Our Pet Health Information Series is provided as part of an on-going effort to improve our services and support the bond between you and your pet.