

New forms of old disease threaten U.S. dogs, CU veterinarians warn

By Roger Segelken

A potentially fatal bacterial disease that damages the liver and kidneys of dogs, humans and other animals -- leptospirosis -- is appearing in new forms in the United States. Citing an alarming increase in leptospirosis cases, bacteriologists in the Cornell College of Veterinary Medicine's Diagnostic Laboratory are urging dog owners to watch for symptoms of the disease until improved vaccines are available.

"We're especially concerned about some of the new types of lepto, such as *grippityphosa*, that we first documented in the New York City metropolitan area in dogs, but which probably is not confined there. We're finding *grippityphosa* in the Northeast and in other areas of the country," said Patrick McDonough, a veterinary bacteriologist at the Cornell Diagnostic Laboratory. That laboratory is the official diagnostic center for animal disease control in New York state and each year conducts more than 700,000 diagnostic tests for animals of all species, including humans.

While currently available vaccines do protect against some serovars (serological varieties) of leptospirosis, newer serovars, such as *grippityphosa* and *pomona*, are not included in that protection, McDonough noted, saying: "There is room for improvement in the vaccination protocols." Worldwide, there are more than 200 known serovars of leptospirosis infecting many kinds of mammals, including rodents and cattle.

Leptospirosis is spread by a spirochete (or spiral shaped) bacteria called leptospire in the urine of rodents and other infected animals, as well as in water, such as pond water. The leptospire enters the body through mucous membranes or through abraded skin.

For dog owners, the first signs of leptospirosis in a pet often are several days of anorexia, vomiting, lethargy, depression, muscle pain and sometimes diarrhea or bloody urine. Veterinarians examining dogs with leptospirosis find depression, fever, dehydration, jaundice and abdominal pain. The disease damages the animal's liver and kidneys, sometimes resulting in renal failure and death.

If the disease is caught in time, McDonough said, it can be successfully treated with penicillin and -- when the kidneys have recovered -- with a lengthy course of tetracycline drugs. During their recovery, dehydrated animals need intravenous fluids and "good, supportive nursing care," he added.

"Until vaccines are upgraded to include these new types of lepto, we're advising dog owners to watch for flu-like illnesses in their pets," McDonough said. "If the dog has been exposed to the urine of another domestic animal or a wild animal, either directly or in ponds or run-off water that collect urine, and if you notice these flu-like signs, the pet should be tested for lepto."

Noting that leptospirosis is a zoonotic disease that can pass from animals to humans, Cornell Diagnostic Laboratory Director Donald Lein said the infection can be an occupational hazard for people who work with animals. "This used to be called 'milkers' disease,' and there is real potential for its spread among dairy farm workers, as well as people handling other animals." He said that personnel in large dairy farms, where hundreds of cows are milked several times a day, must work in pits at eye-nose-and-mouth level to a continuous stream of cows -- and to an aerosol form of their urine that could contain leptospores.

"Leptospirosis is a disease that's been around for a long time," McDonough said. "Now we're recognizing new types. Certainly in different areas of the country there are endemic types of lepto that aren't found in other areas, and each area might have its unique lepto problem."

Some facts about leptospirosis

What causes leptospirosis?

Leptospirosis is caused by spirochete (or spiral-shaped) bacteria called leptospores. The leptospores live in fluids from infected animals, including urine, saliva, blood and milk.

What are the symptoms?

In general, the disease resembles the flu with fever, headache, chills and myalgia (muscle pain).

How is leptospirosis treated?

Dogs are treated with a course of antibiotics and with intravenous fluid to overcome dehydration. Diagnosis is based on clinical signs and laboratory tests.

Do humans catch leptospirosis?

Leptospirosis is a so-called zoonotic disease that can be transmitted from animals to humans. People can catch the disease from water that is contaminated by infected wild or domestic animals, as well as from more direct contact with animals, such as rodents, raccoons, skunks and cattle.

Why are cats not affected by leptospirosis?

Tests for antibodies show that some cats are exposed to the disease, but cats almost never show clinical signs of leptospirosis. Some experts believe that cats have developed a kind of immunity to leptospirosis from their longtime association with rodents.

-- from the Diagnostic Laboratory, College of Veterinary Medicine

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