Canine leptospirosis in King County – 2016

Background: Leptospirosis is a re-emerging zoonotic infection. It occurs worldwide but is more common in temperate and tropical areas of the world. Infection is transmitted primarily through contact with water contaminated with the urine of infected animals, either through ingestion of water or by direct contact with mucosal membranes or abraded skin. Control of infection in livestock and pets reduces the risk of human disease, but the existence of wildlife reservoirs complicates prevention.

Leptospira bacteria are maintained in nature by chronically infected reservoir hosts. While our knowledge of the local epidemiology is incomplete, the literature suggests that different animals are reservoirs for different Leptospira serovars: rodents, pigs and horses for bratislava; rats for icterohaemorrhagiae; and raccoons for autumnalis. Recent evidence suggests that seroreactivity in dogs to autumnalis may actually represent cross-reactivity to other serovars, as it has not been isolated from dogs in the U.S.

In a 2006 serosurvey of healthy dogs (n= 158) from 15 local health jurisdictions in WA State, 17% had serological evidence of exposure to one or more leptospira serovars.[1] The most frequently detected serovars were autumnalis, icterohaemorrhagiae, and canicola. Raccoons (n=115) were also tested with positive titers to autumnalis in 13%, pomona in 13%, and icterohaemorrhagiae in 5%.

Human cases: Between 0 and 5 human leptospirosis cases are reported in WA State annually. The most recent King County case was reported in 2012 and was likely exposed in Washington State outside King County, during outdoor activities. The case was hospitalized but recovered. None of the human cases in Washington State have been linked to reported canine infections.

Canine cases: A total of 11 canine leptospirosis cases including 10 confirmed cases and one suspect case were reported in King County in 2016. Statewide there were 22 reported cases, 86% from Western Washington. Cases in King County have fluctuated between 5 and 24 during the last 10 years, with an annual average of 16 (see Figure below). It is unclear if variations over time represent real differences or are related to under-detection and/or under-reporting of cases. Leptospirosis is rare in cats, but one confirmed feline case has been reported in King County, as well as an equine case.

Similar to recent years, the 2016 canine leptospirosis cases came from different areas of the county; however, over one-half occurred within Seattle. Cases occurred throughout the year. One case died and one was euthanized, and the rest were either recovered or recovering at the time of the case report. Cases ranged in age from less than one year to 12 years, and a variety of breeds and sizes were affected. The suspect case had a history of being vaccinated about six months prior to onset of symptoms; the rest of the cases were either unvaccinated or their vaccine history was unknown.

The 2016 cases had titers that reached at least 1:800 for five of the seven common serovars, which is considered diagnostic for surveillance purposes in cases with acute onset of clinical signs compatible with leptospirosis and no history of recent vaccination. Unfortunately, convalescent titers are often not available, so it is not known specifically which serovars were associated with infections. Three cases

had a positive blood and/or urine PCR test for leptospirosis.

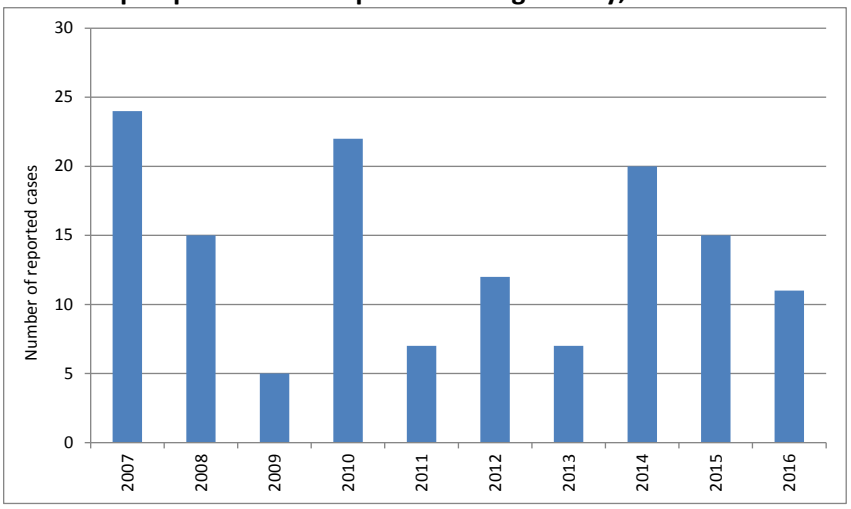
Prevention of human infection: Rodent and raccoon control is particularly important around the home and in recreational areas with human presence. People should avoid contact with water, soil and vegetation contaminated with urine from animals or wear protective clothing and footwear in areas that are possibly contaminated. Veterinary staff should take precautions to avoid exposure to animal urine. Thorough hand washing is important after handling pets or touching anything in their environment.

Vaccination of dogs: A vaccine containing the serovars icterohaemorrhagiae, canicola, grippotyphosa, and pomona is available. It may provide cross-protection to other serovars, but this is an area in need of more research. WSU's Community Practice Vaccination Protocol recommends the 4-way vaccination for dogs at risk of exposure, with a booster given a month before high risk activities such as hunting or outdoor recreation involving water exposure.[2] The 2010 ACVIM Consensus Statement on leptospirosis notes that while naturally occurring canine leptospirosis has been documented in dogs vaccinated with the bivalent vaccine (containing icterohaemorrhagiae and canicola), the panel was unaware of leptospirosis in dogs fully vaccinated with the 4-serovar vaccine, but published data are lacking.[3]

Canine leptospirosis case reporting: Public Health staff are available to advise veterinarians and owners of animals diagnosed with leptospirosis on zoonotic transmission risk and prevention. Call the Zoonotic Disease Program at (206) 263-8454. Veterinarians should report cases to the Public Health Zoonotic Disease Program using the Canine Leptospirosis Case Report Form.

Additional information:
Public Health Zoonotic Disease Program
WA DOH Canine Leptospirosis
Iowa State University Leptospirosis Fact Sheet
AVMA Leptospirosis Brochure
CDC Leptospirosis in Pets

Canine Leptospirosis cases reported in King County, 2007-2016



References

[1] Davis et al. Serological Survey for Antibodies to Leptospira in Dogs and Raccoons in Washington State. Zoonoses Public Health. 2008;55: 436–442.

[2] WSU CVM Community Practice Vaccination Protocols: September 2014. Available at http://vth.vetmed.wsu.edu/client-information/sa-vaccines

[3] Sykes, et al. 2010 ACVIM Small Animal Consensus Statement on Leptospirosis: Diagnosis, Epidemiology, Treatment, and Prevention. J Vet Intern Med. 2011; 25: 1–13. Available at www.ncbi.nlm.nih.gov/pmc/articles/PMC3040842/?tool=pubmed