Occupational Health – Zoonotic Disease Fact Sheet

LEPTOSPIROSIS

KEY FACTS:

- Leptospirosis is a potentially serious illness caused by the bacteria, Leptospira.
- Leptospirosis is present worldwide and is more common in temperate or tropical climates.
- In the United States, an estimated 100 to 200 cases of leptospirosis are identified each year. Most of these cases result from drinking swimming, kayaking, and rafting in contaminated water, or direct contact with infected animals or infected animal tissue.
- It is an occupational hazard for many people who work outdoors or with animals.

SPECIES: Domestic animals, including but not limited to cattle, pigs, horses, and dogs, wild animals, and rodents.

CAUSATIVE AGENT: It is caused by bacteria of the genus Leptospira. Pathogenic leptospires belong to the species Leptospira interrogans, which is subdivided into more than 200 serovars. The main natural reservoirs for human infection vary with serovar: L. canicola in dogs, L. hardjo in cattle, L. pomona in swine, and L. icterohaemorrhagiae in rats.

TRANSMISSION: The bacteria can enter the body through skin or mucous membranes (eyes, nose, or mouth), especially if the skin is broken from a cut or scratch. Drinking contaminated water can also cause infection. When working with animals, individuals can become infected through handling infected animals, contaminating hands, or abrasions with urine, or aerosol exposure during cage cleaning. The organism may also enter through minor skin lesions and probably via the conjunctiva. Many infections have followed bathing or swimming in infected waters. Person to person transmission is rare.

DISEASE IN ANIMALS: In cattle, fever and anorexia occur with rapid decline in milk yield and atypical mastitis. Pregnant cows abort with retention of the placenta. Mild jaundice and severe anemia occurs with enlarged and friable liver and swollen kidneys. In pigs, subclinical infection is common, though it can cause abortion and birth of weak piglets. In dogs and cats, gastroenteritis, jaundice, and nephritis may occur.

DISEASE IN HUMANS: Common symptoms of leptospirosis include high fever, headache, chills, nausea and vomiting, abdominal pains, diarrhea, rashes, muscle aches, and eye redness. In some cases, the illness may be more severe and progress to liver damage and yellowing of the eyes and skin (jaundice), kidney failure, internal bleeding resulting in anemia, or meningitis. Many of these symptoms can be mistaken for other diseases. In addition, some infected persons may have no symptoms. The incubation period is usually 10 days, with a range of 4–19 days, although most people develop symptoms roughly ten days after exposure. The illness lasts from a few days to three weeks or longer. Without treatment, recovery may take several months.

DIAGNOSIS: Early in the disease, the organism may be identified by a blood test. Culture is difficult and requires several weeks. *Please review current literature before prescribing diagnostic testing as recommendations may have changed.*

TREATMENT: Leptospirosis is treated with antibiotics, such as doxycycline or penicillin, which should be given early in the course of the disease. Intravenous antibiotics may be required for persons with more severe symptoms. *Please consult your physician for treatment options as recommendations may have changed.*

PREVENTION\CONTROL: Vaccination in cattle, swine, and dogs can help control the spread of disease. Avoid swimming in or drinking potentially contaminated water. Protect workers by providing boots and gloves and practicing good hygiene. Doxycycline chemoprophylaxis can be provided for individuals at high exposure. To prevent and control unintended infections, use uninfected animals for research, and isolate any animals used in clinical trials. Additionally, only conduct projects in laboratories with proper engineering controls and train staff members in the proper use of required personal protective equipment when they are in spaces containing live agent.

More information on leptospirosis can be found on the Centers for Disease Control and Prevention website at: https://www.cdc.gov/leptospirosis/