Leptospira

Leptospirosis, also called Weil disease, is the most common zoonotic infection in the world. Leptospirosis is caused by an infection with the spirochete bacterium Leptospira and is most often spread through exposure to the urine of infected animals either from direct contact or from contact with soil or water contaminated by the urine. Common animals that transmit Leptospirosis include farm animals such as cattle, pigs, and horses, but they can range from wild animals such as raccoons and porcupines to domesticated dogs.[1]

Leptospira has the capability to penetrate non-intact skin and mucous membranes. Infection occurs through contact with infected animals or their contaminated urine and bodily tissues. Additionally, Leptospira may be contracted from contaminated soil and water. Historically, most exposures were linked to recreational water activities; however, there has been a recent increase in occupational exposures among agricultural workers in the United States. The organism can persist in freshwater for as long as 16 days and in soil for nearly 24 days when excreted in the urine of infected animals. If contaminated water is inhaled, the bacteria can enter the human body through open wounds, mucous membranes, or the respiratory system. Furthermore, transmission can occur across the placenta in pregnant individuals, potentially resulting in miscarriage during the first two trimesters.[2] If infection occurs in the third trimester, it may lead to stillbirth or intrauterine death. Once inside the body, the bacteria disseminate through the lymphatic system and subsequently into the bloodstream. From there, the infection can spread throughout the body, with a tendency to localize in the liver and kidneys. Symptoms typically manifest within 1 to 2 weeks, although it may take up to a month for them to appear.[3]

References

1. Russell CD, Jones ME, O'Shea DT, Simpson KJ, Mitchell A, Laurenson IF. Challenges in the diagnosis of leptospirosis outwith endemic settings: a Scottish single centre experience. J R Coll Physicians Edinb. 2018 Mar;48(1):9-15.
2. Jiménez JIS, Marroquin JLH, Richards GA, Amin P. Leptospirosis: Report from the task force on tropical diseases by the World Federation of Societies of Intensive and Critical Care Medicine. J Crit Care. 2018 Feb; 43:361-365.
3. Nafeev AA, Vetlugin NI, Feofanova SG, Nechaeva AS, Savinova GA. [Leptospirosis and its complications]. Ter Arkh. 2011;83(11):48-51.