WHEN SHOULD LEPTOSPIROSIS BE SUSPECTED IN A DOG?

- Leptospirosis can cause a variety of clinical problems in dogs, ranging from subclinical infections to sudden death with no preceding clinical signs. The most common problem is acute renal failure (also called acute kidney injury [AKI]), but leptospirosis can also cause liver disease, ocular disease (uveitis), vasculitis, abnormal bleeding, muscle pain, polyuria, or polydipsia.
- Leptospirosis should always be considered in any dog that is presented with AKI, including dogs that previously had chronic kidney disease (CKD), sometimes called “acute-on-chronic” kidney disease. Leptospirosis should be suspected in dogs with AKI until testing has proved that something else caused the kidney damage.

WHICH TEST RESULTS INCREASE SUSPICION OF LEPTOSPIROSIS?

- In addition to AKI manifesting as increased serum concentrations of creatinine and blood urea nitrogen, canine leptospirosis can also cause mild decreases in platelet counts (thrombocytopenia); increased liver enzymes, particularly alkaline phosphatase; and increased bilirubin concentrations. Urinalysis may show a low urine specific gravity, the presence of blood or casts, and sometimes glucosuria despite a normal serum blood glucose concentration.

WHICH TESTS CAN DIAGNOSE LEPTOSPIROSIS IN DOGS?

- The disease can be diagnosed by either finding evidence of the organism in the blood or urine, or by detecting an antibody response in the blood. Many tests, including dark-field microscopy, immunofluorescent antibody tests, and polymerase chain reaction (PCR), can potentially detect leptospires in urine; however, because none of these tests are perfect, it is important to bear in mind that a negative test (eg, a PCR) does not rule out the diagnosis of leptospirosis; a very low number of leptospires may be present, or the organisms may not have been present in the blood or urine at the time of sampling. Although false positives are possible with any test, a positive result for leptospirosis on a PCR should be taken seriously, as this is a zoonotic disease.
- The most common test for antibodies is the microscopic agglutination test (MAT). This is a simple blood test that can confirm whether the dog has been exposed to Leptospira spp bacteria. It is important to consider vaccination history when interpreting results of this test. Be sure to perform acute and convalescent MAT tests, which involve 2 samples taken approximately 2 weeks apart, particularly if the first sample is negative. A negative first sample does not rule out leptospirosis.

Leptospires are primarily transmitted through direct or indirect contact with urine. The organism can also be present in other bodily fluids, but these are a less common source of exposure.