



LEPTOSPIROSIS UPDATE 6th December, 2019

There has been another case of confirmed Leptospirosis this week in a dog residing in Surry Hills. The dog was not vaccinated against *Leptospirosis*. Unfortunately, the dog was euthanised after developing anuric renal failure. Another suspected case seen in September has recently been confirmed based on rising antibody titers. This dog lived in Redfern and ingested a rat prior to becoming unwell. This dog was also anuric and was euthanised. Serovar copenhageni was confirmed in both cases.

This brings the case numbers to 11 in total with 8 cases diagnosed since May 2019. All dogs were from Surry Hills, Darlinghurst, Redfern and Glebe. So far the mortality rate has been 100%.

We again want to emphasize the importance of considering the differential diagnosis of *leptospirosis* in all dogs with nonspecific clinical signs (lethargy, vomiting, diarrhea, haemorrhages, conjunctivitis) that are from the area in question. In these dogs (and especially if owners mention contact with rats or stagnant water) we recommend offering blood tests (CBC, biochemistry) and urinalysis. Consistent clinicopathological abnormalities include marked azotaemia, marked increases in liver enzymes, moderate to severe hyperbilirubinaemia and glucosuria. However, these changes can be absent very early in the course of the disease. Therefore, urine and blood collected into EDTA should be sent for leptospirosis PCR (important: samples need to be taken BEFORE antibiotics are given) and serum should be collected in order to perform MAT to determine the serovar. Serum can be stored until results for PCR return and then sent if PCR is positive, or can be sent to the University of Sydney for research. In suspicious cases please retain some EDTA, serum and urine samples for leptospirosis research if possible. If rat contact is confirmed (and the dog has been in the affected area) we recommend:

- treatment with doxycycline 10mg/kg SID if no hepatopathy is present
- treatment with IV penicillin or their derivatives (ampicillin, amoxicillin, amoxicillin clavulanate) if liver enzymes are elevated pending PCR results, if PCR is positive start doxycycline as soon as administration of oral medication is possible



Duration of treatment

Treatment should be continued until PCR and serology results have returned.

Patients who return a positive PCR result have the diagnosis confirmed. Treatment with penicillin derivatives should be continued. As soon as it is possible to give oral medication, a two-week course of doxycycline (10mg/kg SID) is recommended to ensure that the infection is cleared from the kidneys.

A negative PCR result does not exclude the diagnosis in a dog that has been treated with antibiotics before taking blood and urine. Acute and convalescent (after 7-14 days) MAT titres should be tested, where a 4-fold increase in titre for individual serovars is consistent with infection. In these patients, treatment with penicillin and its derivatives should be continued until the convalescent titre has been tested. In the case of a 4-fold increase in MAT titre the diagnosis is confirmed. As soon as it is possible to give oral medication, a two-week course of doxycycline (10mg/kg SID) is recommended to ensure that the infection is cleared from the kidneys.

A negative PCR result in a dog that has not been treated with antibiotics before taking blood and urine and with a negative MAT titre excludes Leptospirosis. Antibiotic treatment can be stopped.

Zoonotic risk

Importantly, leptospirosis is a zoonosis. Therefore, suspicious cases should be isolated. Ideally, a urinary catheter should be placed to avoid contamination of the environment as well as to monitor urine volume output. It is imperative to avoid contact with urine and to wear appropriate personal protective equipment (PPE) including gloves, impermeable gowns, a face mask and glasses. Isolation is usually maintained until the dog has been treated with IV penicillin derivatives for at least 72 hours.

Owners of dogs that are not unwell and have no clinicopathological abnormalities consistent with leptospirosis, but have had contact with rats, should regardless be advised to avoid contact with their dogs' urine.

If you have any further questions, any suspicious cases or you want to submit samples for the Leptospirosis research study please contact Christine Griebisch at the University of Sydney (christine.griebisch@sydney.edu.au, 02 9351 3437).