- Why not consider a Lepto as a core vaccine?
  -This is based on the recommendations in the US by AAHA. In endemic regions, such as where I am, most veterinarians considered it a core vaccine.

- Hello! Do you see lepto cases in dogs vaccinated with L4?
  -We definitely see lepto "break through" cases in vaccinated dogs with multivalent vaccines. The vaccines are very good and seem to decrease the extent of the disease but still see cases.

- Have you seen Cerebral hemorrhage?
  -I have not, but we did see one encephalitis dog that had lepto. This is not a typical presentation.

- How often do you see peripheral nervous system clinically affected? Is It posible to be the only responsible for a severe diffuse miosites in a dog?
  -In my endemic region our serovars do not typically exhibit these signs. It is possible and reported to get neuropathies. Most patients will also have an associated azotemia, but possible depending on the various serovars in your region.

- Would you test for lepto clinically stable dog with PD/PU without azotemia?
  -Absolutely, we see this more often than I would expect. If the disease has affected 2/3 of the renal parenchyma the patient will lose concentration ability but not be azotemic yet.

- For early treatment can we provide the potassium to the dog along other medication?
  -I typically only add KCL to fluids if the potassium is trending downward after hospitalization on fluids. Oral supplementation after initial fluid correction is often not needed but if managing outpatient it can safely be administered.

- How many of your patients with AKI due to Lepto need dialysis +/- TPE?
  -I unfortunately do not have a statistical value for this information however subjectively we see about one patient every 2-4 weeks during the high lepto season (spring/fall) that are dialysis dependent. We typically only perform TPE concurrently if the bilirubin is extremely high (>20) as we worry about kernicterus.

- How you can differentiate the type of Lepto while you are taking samples from different area or points from a farm of small, large, equine and poultry animals are living?
  -Typically, your local veterinary diagnostic lab will have the serovars that are in the endemic region and various species. The MAT, rapid tests, and PCR are overall very inclusive for the various serovars.

- Is there is a difference between there samples titer differences from samples ?
  -Typically, the difference in titer is not clinically important due to high cross reactions and paradoxical reaction. If you have a 4-fold increase in any convalescent titer that is diagnostic for the disease.

- In the case of cats, what would be the most recommended diagnostic method?

-Most studies evaluate an MAT (serology) testing over PCR as they may be less less likely to present with an AKI and more likely a chronic patient. If that is the case, then they should have had time to mount an immune response.

- Can we give enrofoxacin by IM route? Isn't it just licenced for SC use?
  -In the US, that is correct. The study I referenced was a South American study and I believe the equine formulation was used in dogs.

- Could you clarify in which cases and stages of the disease Immunocomb Leptospira IgG (Biogal) should be used?
  -It should be used similarly to the other serology/MAT testing. It may be able to detect even sooner than MAT but you may have a false negative in the very acute stage of the disease. It also seems to have a longer titer so could be helpful in chronic exposure cases.

- What IVF solution is ideal for lepto cases?
  -Most of the time any fluid therapy is sufficient, we typically use a standard replacement fluid such as Normosol-R or Lactated Ringers +/- KCl supplementation.

- The treatment is only for dogs or it is possible to use it for cats too?
  -The treatment recommendations apply to cats as well, but I would use caution with fluoroquinolones in cats due to the possible side effects. Doxycycline should be sufficient in most cases.

- Can you send me the studies proven each medication you're mentioning works for the disease.
  -Below are the references for those papers;

  Mauro T, Harkin K. Persistent leptospiruria in five dogs despite antimicrobial treatment (2000-2017). *J Am Anim Hosp Assoc*. 2019;55:42-47.

  Hetrick K, et al. Evaluation by polymerase chain reaction assay of persistent shedding of pathogenic leptospires in the urine of dogs with leptospirosis. *J Vet Intern Med*. 2021;1-8.

- What are the medications for the treatment and for how long is it treated?
  -See references above
  The most commonly used antibiotic is doxycycline at 5 mg/kg orally twice daily for 2 weeks. For resistant leptospires, there are no approved protocols but in the studies they used enrofloxacin (oral or injectable) 10 mg/kg once daily for 2 weeks, or clarithromycin 10 mg/kg orally twice daily for 3 weeks. The studies also used a few other protocols (see papers above) until they could confirm the patient became urine PCR negative.

- Any thoughts on vaccine reactions? It seems if you're going to get a reaction it will be in the small breed, young dogs, which unfortunately are most prone.
  -Agreed, they are the biggest group of concern. It seems with the newer vaccines this is happening less but still a concern. Per the AAHA guidelines, “Administration of multiple doses of parenteral vaccine at the same appointment, particularly among small breed dogs (≤ 10 kg), may increase the risk of an acute-onset adverse reaction. Alternative vaccination

schedules may be indicated, eg, delaying administration of a non-core vaccine by 2 weeks following administration of core vaccines."

- You mentioned blood samples being more sensitive during less than 10 days of infection, and best at day 5, does day count include incubation period or does day 1 start from start of clinical symptoms?
  -That is referencing post infection date. This is why most laboratories will recommend MAT and urine PCR (and skip blood PCR) because many patients will have a negative blood PCR sample. The window of a positive blood PCR may very well be prior to them even getting ill.