

Leptospirosis – a changing environment

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Canine leptospirosis is a potentially lethal disease which is problematic both to diagnose definitively and to treat. In recent years it appears to have become more prevalent across Europe for a variety of reasons.¹

There is increasing evidence in the UK too that the disease is starting to be seen more in dogs already vaccinated. Traditionally, bivalent leptospirosis vaccines have been used to immunise dogs, but the epidemiology has changed, leaving dogs open to contracting the disease through contact with other *Leptospira* serovars not covered by current vaccines.

Serological evolution

Historically, canine leptospirosis has been associated with serovars Canicola and Icterohaemorrhagiae, and the bivalent vaccines have provided immunity against these. However, scrutiny of serological data from reference laboratories across

Europe (including the UK), indicates that a change has occurred in the epidemiology of the disease in Europe and the UK (Figure 1).

Results of modified agglutination tests (MAT) from clinical cases demonstrate that dogs are increasingly at risk of contracting leptospirosis caused by serovars from other serogroups, in particular Australis and Grippityphosa. This change means that vaccines covering serovars from the most common serogroups (Canicola, Icterohaemorrhagiae, Australis and Grippityphosa), offer dogs better protection against leptospirosis than the bivalent vaccines currently available.

Case in point

Jonathan Horlock, BVetMed, MRCVS, of Marches Vets, Leominster, recently dealt with a case of a six-year-old, fully vaccinated yellow Labrador retriever – a working gun dog, who died from leptospirosis caused by infection with the Bratislava serovar. Jonathan comments: “All the symptoms showing were generalised – the dog was off its food and had a slightly raised temperature.

“We were suspicious of Bratislava infection as we’d already seen a couple of cases, so we sent the dog to Bristol University for a diagnosis. Our suspicions were confirmed but the symptoms were too acute and the dog didn’t respond to treatment. Unfortunately the patient died. This was a well-looked-after dog that’d had all of its core vaccinations and leptospirosis, plus all its annual boosters,

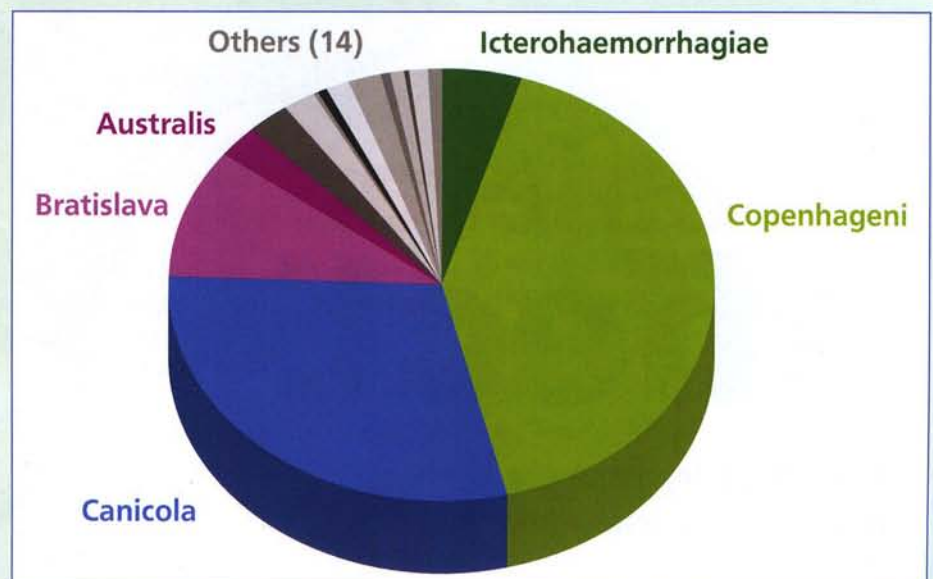


Figure 1. UK *Leptospira* serovars identified in MAT-positive clinical submissions to the Animal Health & Veterinary Laboratories Agency (AHVLA) from 2007-2011

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so we are clearly now seeing new strains appearing.”

Jonathan adds: “The difficulty with leptospirosis is that it’s hard to diagnose, because the symptoms are generalised, yet treatment needs to be immediate. All dogs – whether working or otherwise – need to be vaccinated and annual boosters kept up-to-date. We also now clearly need a more up-to-date vaccine that can ensure dogs are safe from the new strains we’re seeing.”

Implications in practice

Last year veterinary surgeons representing six European countries and the US – with an expertise in leptospirosis and infectious diseases – met to discuss the growing concerns over the increasing number of cases being seen and, where possible, treated. The most up-to-date research was shared and the conclusion drawn that the existing bivalent leptospirosis vaccines, containing strains of serogroups Canicola and Icterohaemorrhagiae, were no longer offering adequate protection against the disease.



Figure 2. Veterinary staff have a particular interest in encouraging owners to take preventive measures

Professor William Ellis, BVMS, PhD, FRCVS, specialist scientist in leptospirosis, says: “The current situation in the UK is that infection caused by *L. canicola* and *L. icterohaemorrhagiae* still occurs and *L. bratislava* infection is now emerging as a problem. The best form of prevention is vaccination and all dogs should be protected against the risk of the existing and emerging serovars.

“Canine leptospirosis is also an important zoonosis; which means veterinary staff

have a particular interest in encouraging owners to take preventive measures and to minimise contact with dog urine and in handling dogs with potential infection” (Figure 2). [vni](#)

References

1. W. A. Ellis, (2010) Control of canine leptospirosis in Europe: time for a change? *Veterinary Record* 167: 602-605.