

Should healthy dogs be tested for Ehrlichiosis and Lyme Disease ?

Canine Ehrlichiosis

Diagnosis should be made on the basis of a combination of clinical signs, hematological abnormalities, and serology findings. Not serology alone.

“When clinical signs or clinicopathologic abnormalities consistent with ehrlichiosis are found in conjunction with positive ehrlichial serology, a clinical diagnosis of ehrlichiosis should be made and treatment instituted.”¹

Arguments against serologic testing of healthy dogs for ehrlichiosis out-number arguments for testing by over 2 to 1 in a recent publication.²

“Arguments for...”

- 1) ...give(s) more information concerning seroprevalence...;
- 2) allow(s) the dog to be used as a sentinel for ehrlichiosis in humans...;
- 3) ...minimize(s) the potential for development of the disease within the kennel...;
- 4) the detection of subclinically infected dogs could promote more effective therapy,... and
- 5) the testing and treating of subclinically infected dogs could reduce the reservoir...in the environment.”

“Arguments against...”

- 1) healthy dogs presumably are a low incidence group, and false-positive test results in low incidence groups could result in the unnecessary treatment of uninfected dogs;
- 2) ...the currently available point-of-care test (Snap® 3Dx™) uses *E. canis* antigen and will consistently detect infection with this species but will not detect other ehrlichial species that infect dogs;
- 3) it is unclear whether treatment prevents the development of the chronic phase of infection;
- 4) some immunocompetent dogs may be able to eliminate *E. canis* infection without therapy;...
- 5) it is unknown how many dogs eliminate ehrlichial infection naturally;
- 6) it is impossible to determine which dogs will go on to develop chronic disease manifestations;
- 7) ...presence of serum antibodies only denotes exposure to an ehrlichial species and does not document current infection;
- 8) the treatment of healthy dogs is likely of minimal benefit because infected, treated dogs do not develop permanent immunity, and infected dogs generally are reexposed in their endemic environment;
- 9) other canid reservoir hosts exist in the environment and the treatment of positive pet dogs is unlikely to have an impact on the prevalence of the organism in the environment;
- 10) ...treatment of all seropositive dogs may increase the risk for the development of doxycycline resistance; and...
- 11) all drugs currently used for the treatment of ehrlichiosis have potential adverse effects and...treatment may result in more problems than it prevents.”

Using antibody testing to monitor treatment of ehrlichiosis is problematic.

*“After successful treatment in most dogs, antibody titers decline and generally become negative within 6-9 months.... Some dogs have a resolution of clinical and clinicopathologic abnormalities yet retain high titers to *E. canis* for years. It cannot always be determined in these dogs whether there is continued infection or merely persistence of antibodies³.”*

Snap® 3Dx™ may miss most of the *Ehrlichia* species that infect dogs.

*Ehrlichia canis, Ehrlichia plays, Ehrlichia risticii var. atypicalis, Ehrlichia ewingii, Ehrlichia chaffeensis, Ehrlichia phagocytophilia, Ehrlichia equi, and human granulocytic Ehrlichia (HGE) infect and cause natural disease in the dog⁴. “...the currently available point-of-care test (Snap® 3Dx™) uses *E. canis* antigen and will consistently detect infection with this species but will not detect other ehrlichial species that infect dogs⁵”.*

Canine Lyme Disease

Diagnosis of Lyme disease requires a number of criteria, including typical clinical signs and prompt response to antibiotics. A positive antibody test is not enough without clinical signs.

“The criteria for diagnosing Lyme disease in dogs include 1) a history of exposure to Ixodes species ticks in an endemic area, 2) typical clinical signs, 3) a positive serologic test result from a properly validated test, and 4) a prompt response to antibiotic therapy. It would be unusual for a dog with clinical Lyme disease to not fulfill all these criteria⁶.”

Antibiotic treatment in asymptomatic dogs is not indicated.

“Antibiotic therapy in asymptomatic dogs known to have been exposed to Ixodes species ticks or to be seropositive is likely not indicated in most instances, because the incidence of clinical disease in seropositive dogs is relatively low and such therapy is unlikely to eliminate the infection. The high rate of re-exposure in endemic areas also makes prophylactic therapy impractical for many animals⁷.”

What is the veterinarian to tell the client when their dog is still antibody positive after completing a course of doxycycline antibiotic therapy? Treat it again? What if it is still positive after a second course of treatment? Argue that doxycycline does no harm? Although considered a relatively safe drug, the 4th edition of *Plumb's Veterinary Drug Handbook* includes the following adverse effects associated with doxycycline: *nausea and vomiting; esophageal strictures in cats (unknown if this occurs in dogs); and overgrowth (superinfections) of non-susceptible bacteria or fungi.*

In Conclusion

After review of the literature, it is the opinion of Synbiotics that screening and treating asymptomatic dogs for Ehrlichiosis and Lyme is not warranted.

References

1. T. Mark Neer, Edward B. Breitschwerdt, Russell T. Greene, and Michael R. Lappin. Consensus Statement on Ehrlichial Disease of Small Animals from the Infectious Disease Study Group of the ACVIM. *J Vet Intern Med* 2002; 16:310.
2. Ibid. p. 312-313.
3. Ibid. p. 312.
4. Ibid. p. 309.
5. Ibid. p. 312.
6. Astrid Nielssen, Anthony Carr, and Johanna Heseltine. Update on Canine Lyme Disease. *Vet Med* 2002; 97 (8): 606.
7. Ibid. p. 606.

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