Vector-Transmitted Pathogens

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While data on the seroprevalence of vector-transmitted pathogens in the United States are fairly extensive, there is less information about the occurrence of these diseases on the West Coast. This study examined the distribution of 4 vector-borne canine pathogens in Washington, Oregon, and California. Blood samples were collected from 2431 pet dogs visiting clinics for routine preventive examinations. Each sample was tested for *Anaplasma phagocytophilum, Borrelia burgdorferi, Ehrlichia canis,* and *Dirofilaria immitis* using the SNAP 4Dx kit (idexx.com). The overall seroprevalence was 2.4% for *A phagocytophilum*, 1.2% for *B burgdorferi*, 0.7% for *E canis,* and 0.7% for *D immitis*. The distribution maps of the data show relatively high levels of seropositive dogs in northern California, southwestern Oregon, and the Puget Sound region, with sporadic clusters of infection throughout the other western states. California had the highest levels of all pathogens, and individual counties in California had exposure ranging from 0% to 16%. The highest seroprevalence identified in the study was found in Josephine County, Oregon, where 33% of dogs tested positive for *A phagocytophilum*. A high rate of coinfection was also identified with both *A phagocytophilum* and *B burgdorferi* with a calculated odds ratio of 18.7.

Commentary

This study fills the gap of important prevalence information for the Pacific states. Clinicians in northern California upward to the Puget Sound should be aware that these pathogens, previously thought to be largely absent from this area, are present in significant numbers. The authors also indicate that these prevalence numbers are likely underestimations caused by the seasonality of samples and the time to seroconversion following infection. Data regarding owner use of preventive treatments and dog lifestyles were not collected, so it is unclear whether these factors contributed data.—*Carly Jordan, PhD*

Source

Spatial distribution of seroprevalence for *Anaplasma phagocytophilum*, *Borrelia burgdorferi*, *Ehrlichia canis*, and *Dirofilaria immitis* in dogs in Washington, Oregon, and California. Carrade D, Foley J, Sullivan M, et al. ***VET CLIN PATHOL*** 40:293-302, 2011.

Neuromyotonia in Jack Russell Terriers

Myokymia describes contraction of independent muscle fibers, which induces an undulating, vermicular, or wavelike movement of overlying skin. Neuromyotonia is a combination of muscle twitching or myokymia, persistent muscle contraction, muscle stiffness or cramps, and impaired muscle relaxation. This retrospective report describes the clinical and clinicopathologic findings, treatment, and outcome for 37 Jack Russell terriers with myokymia and neuromyotonia. Age of onset varied from 2 to 30 months of age (mean, 8 months); the ratio of male–female dogs was 24:13. Frequency of myokymia episodes varied from a few times a week to a few times a month, with 1 dog exhibiting this sign daily. Hot weather, excitement, and exercise provoked episodes. Elevations in creatine kinase, aspartate aminotransferase, alanine aminotransferase, and alkaline phosphatase were the most frequently reported serum biochemical abnormalities. Electromyographic abnormalities were noted in 15 of the 21 dogs tested. Abnormalities of the axonal voltage-gate potassium channels are believed to cause the clinical signs of myokymia; in this study, most dogs were treated with sodium channel blockers with variable success. Seven dogs died or were euthanized during a neuromyotonic episode, 15 were euthanized because of the disease, 3 were euthanized for unknown or unrelated causes, and 9 were lost to follow-up. The owners of the 3 surviving dogs were advised to avoid stress, excitement, and walking in hot weather. The occurrence of this disease in this particular breed suggests a heritable condition. Long-term prognosis is not promising.

Commentary

Although neuromyotonia is rare, it is important to have a general knowledge of this condition as a potential cause of episodic attacks in this dog breed. Diagnosis can be challenging because clinical signs of this condition easily could be confused as seizure activity or another paroxysmal event if not directly witnessed by a veterinarian. This underscores the importance of direct observation of an episode by the veterinarian. In lieu of this, high-quality video taken by the owner, along with a complete and accurate description of episodes, will help determine the underlying nature of episodic events.—*Mark Troxel, DVM, DACVIM (Neurology)*

Source

Myokymia and neuromyotonia in 37 Jack Russell terriers. Bhatti SF, Vanhaesebrouck AE, Van Soens I, et al. ***VET J*** 189:284-288, 2011.