



AKCCHF Grant 2519: Prevalence of Bartonella spp. Infection in Dogs with Cardiac and Splenic Hemangiosarcomas within and between Geographic Locations

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Abstract: Splenic masses comprise ~50% of all canine splenic disease. Despite advances in imaging and pathologic definition, the etiology and medical relevance of splenic lesions in dogs are often ambiguous. While some splenic tumors are benign, approximately two-thirds are highly malignant and carry a poor prognosis. Hemangiosarcoma (HSA) accounts for the majority of canine malignant splenic tumors and occurs in many large dog breeds, including mixed breeds. A less common site of HSA localization is the heart (cardiac HSA). Risk factors for both cardiac and splenic HSA remain unclear, confounding development of preventative strategies. The investigators recently reported a high prevalence of species of the bacterial genus Bartonella in dogs with HSA from North Carolina, suggesting a potential role in the initiation and/or progression of this cancer. Bartonella species exist worldwide and are transmitted by blood-sucking arthropods (e.g. ticks, fleas) and their presence in splenic tissue could potentially be explained by the fact that the spleen is primarily responsible for removal of blood-borne parasites from the systemic circulation. The investigators will perform a comprehensive examination of the potential association between Bartonella infection and HSA by comparing the prevalence of Bartonella DNA in tumor and blood samples from both splenic and cardiac HSA cases, and also within and between distant geographical locations in the US. Ultimately, demonstration of a robust association between Bartonella infection and the development of HSA may lead to new opportunities for improved diagnosis, treatment and prevention of this devastating cancer.

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