



GRANT PROGRESS REPORT REVIEW

Grant: 01231-A: *Prevalence and Localization of Bartonella spp. in Vascular Tumors from Dogs*

Principal Investigator: Dr. Edward Breitschwerdt, DVM

Research Institution: North Carolina State University

Grant Amount: \$10,800.00

Start Date: 4/1/2009 **End Date:** 3/31/2010

Progress Report: 12 month

Report Due: 3/31/2010 **Report Received:** 3/31/2010

Recommended for Approval: Approved

(Content of this report is not confidential. A grant sponsor's CHF Health Liaison may request the confidential scientific report submitted by the investigator by contacting the CHF office.)

Original Project Description:

Background: The genus *Bartonella* contains more than 20 species of bacteria, most of which have been discovered within the past decade. These bacteria are able to infect and survive within blood vessel cells for protracted periods, which results in persistent vascular infections in dogs and other mammals. *Bartonella* spp can induce the uncontrolled growth of vascular endothelial cells that came from humans and animals.

Objective: This study will determine if *Bartonella* DNA can be found in the tissues of dogs with vascular tumors and will facilitate the development of tests that can be used to establish the cellular localization of *Bartonella* in these and other diseased tissues from infected dogs.

Original Grant Objectives:

Objective 1: Determine the prevalence of *Bartonella* spp. DNA in neoplastic vascular tissues obtained from dogs with hemangiosarcoma as compared to control non-neoplastic or non-vascular tumors involving analogous organs or anatomic sites in the body:

Objective 2: Develop an immunohistochemistry assay and FISH protocol that will facilitate defining the cellular localization *Bartonella* spp in various tissues obtained from dogs.

Publications:

None at this time- ACORN provided preliminary data - 3/31/10

Report to Grant Sponsor from Investigator:

This study showed a statistically higher prevalence of Bartonella spp. DNA in surgical biopsy samples obtained from dogs with hemangiosarcoma (the most commonly encountered vascular neoplasm of spleen in dogs) compared to dogs with lymphoid nodular hyperplasia (the most commonly encountered non neoplastic splenic disease). These results provide preliminary evidence that bacteria of the genus Bartonella may contribute to the development of vascular tumors in dogs. One future direction the researchers hope to explore will be to test the prevalence of Bartonella spp. in other vascular tumors, particularly hemangiopericytomas. Also, in an effort to obtain additional environmental control data they are planning to test the prevalence of Bartonella spp. in the spleens of dogs euthanized at a local animal shelter. Studying additional control populations will be required to determine the medical relevance of the data generated to date and will provide information regarding the prevalence of Bartonella spp in the spleens of dogs within the general dog population.