



## RESEARCH PROGRESS REPORT SUMMARY

**Grant 02389-MOU:** Characterization of Ventricular Arrhythmias in Rhodesian Ridgebacks

**Principal Investigator:** Kathryn Meurs, DVM, PhD  
**Research Institution:** North Carolina State University  
**Grant Amount:** \$26,919.00  
**Start Date:** 9/1/2017      **End Date:** 8/31/2020  
**Progress Report:** End-Year 1  
**Report Due:** 8/31/2018      **Report Received:** 8/27/2018

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### **Original Project Description:**

The investigators recently identified a genetic mutation associated with heart arrhythmias in Rhodesian Ridgebacks. Dogs with the mutation appear to be at the most risk of developing an arrhythmia and suffering sudden death between 12-24 months of age, however, this timeline is variable, and some dogs appear to outgrow the arrhythmia. Due to the lack of knowledge of the specific at risk age, owners of dogs with the mutation must repeat the Holter monitor (a test to monitor heart rhythm) every few months to identify when their dog is at greatest risk and may need treatment. The objective of this study is to repeatedly perform regular Holter monitor testing on dogs with the mutation (including dogs with one copy and with two copies) every 4 months from 6-24 months of age with a final evaluation at 36 months to narrow in on the age when the arrhythmias appear to be the most severe. Gaining this increased clinical understanding of the disorder will decrease the risk of sudden death by helping owners and veterinarians in monitoring and providing treatment intervention for their dogs, and will further inform breeders and owners by characterizing the clinical and genetic manifestations of the disorder.

Funding for the research is provided through the collaborative efforts and generosity of the Rhodesian Ridgeback Charitable Foundation. The AKC Canine Health Foundation supports the funding of this effort and will oversee grant administration and scientific progress reports.

**Publications:** None yet.



### **Presentations:**

We have submitted an abstract to the American College of Veterinary Internal Medicine meeting in Seattle entitled "Familial ventricular arrhythmias in the Rhodesian Ridgeback". This will not present the results of this study but rather a compilation of Holter readings from dogs of all ages with this disease. I think it is important to get this information out there.

We presented an abstract to the American College of Veterinary Internal Medicine meeting in Seattle entitled "Familial ventricular arrhythmias in the Rhodesian Ridgeback". This was not a summary of results of this study but rather a compilation of Holter readings from dogs of all ages with this disease

### **Report to Grant Sponsor from Investigator:**

We previously reported the identification of an inherited form of heart disease in the Rhodesian Ridgeback that has been associated with heart arrhythmias and sudden cardiac death. We identified a genetic mutation associated with the disease.

We are now following 15 heterozygous dogs and 18 homozygous dogs with the mutation by repeated Holter monitoring between 6 and 24 months of age.

Historically, we believed that dogs with the mutation appeared to be at the most risk of developing the arrhythmia and suffering sudden death before 24 months of age. However, our study data obtained so far would indicate that most dogs appear to be at highest risk of developing the arrhythmia before 10 months of age. The average age of onset of the arrhythmia was 7 months of age, however, some dogs appear to develop the arrhythmia as young as 12 weeks of age.

Due to the risk of sudden death with this disease without any predictive symptoms we feel that owners of young Rhodesian Ridgebacks should be encouraged to genetically screen their dogs and if positive, Holvers their dogs a few times before 12 months of age. If the arrhythmia is present, we would recommend discussing the need to treat the dog with their veterinarian since many dogs respond very well to treatment.