



RESEARCH PROGRESS REPORT SUMMARY

Grant 02252: Investigating a Ketogenic Medium-Chain Triglyceride (MCT) Supplement for the Treatment of Drug-Resistant Canine Idiopathic Epilepsy and Its Behavioral Comorbidities

Principal Investigator: Dr. Holger Andreas Volk, DVM, PhD

Research Institution: Royal Veterinary College, University of London

Grant Amount: \$107,697.06

Start Date: 5/1/2016

End Date: 10/31/2017

Progress Report: Mid-Year 1

Report Due: 10/31/2016

Report Received: 11/17/2016

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. The below Report to Grant Sponsors from Investigator can be used in communications with your club members.)

Original Project Description:

Canine epilepsy is a chronic neurological condition, often requiring lifelong medication with anti-epileptic drugs (AEDs). Despite appropriate treatment with available AEDs, seizure freedom may not always be achievable. Indeed, over two thirds of dogs with epilepsy continue to have seizures long-term and around 20-30% remain poorly controlled on standard AEDs. These hardest to treat dogs are termed 'refractory' or 'drug-resistant' patients. There is an urgent need to develop alternative treatments to improve the quality of life (QoL) of drug-resistant patients, who may continue to experience unpleasant AED side-effects despite their lack of success. The ketogenic diet, originally characterized as high in fat and low in carbohydrates, has been a successful treatment in children with epilepsy for several decades, decreasing seizure activity and even leading to seizure freedom in drug-resistant patients. Recent research has identified that a component of the ketogenic diet, a medium-chain fatty acid ('MCT') called C10 has directly anti-seizure effects on the brain. This project will investigate whether supplementing the diet of dogs with drug-resistant epilepsy with an MCT oil containing C10 will reduce seizure frequency and/or severity. As epilepsy has multiple impacts on QoL beyond seizure frequency, we will also investigate whether the MCT supplement alters the side effect profile of AEDs the patient is already receiving, improves any behavioural problems associated with epilepsy (e.g. anxiety), cognition and improves the



stress levels of the affected dog and their owner. If successful, MCT supplements could be a vital new addition to the tool-kit of epilepsy treatment.

Grant Objectives:

None at this time.

Report to Grant Sponsor from Investigator:

The project will investigate whether supplementing the diet of dogs with drug-resistant epilepsy with an MCT oil containing C10 will reduce seizure frequency and/or severity. As epilepsy has multiple impacts on QoL beyond seizure frequency, we will also investigate whether the MCT supplement alters the side effect profile of AEDs the patient is already receiving, improves any behavioural problems associated with epilepsy (e.g. anxiety), cognition and improves the stress levels of the affected dog and their owner. We have made good progress after we have identified oils which have a good palatability. We have received full ethical approval, have recruited staff on the trial, have standardised and established all the additional cognitive, behavioural, blood and gait tests in the lab and have currently good case recruitment numbers. We will not be able to give an accurate update until we have recruited all dogs, but it does look currently that we will meet the expected timeline.