ILLINOIS

College of Veterinary Medicine
Veterinary Teaching Hospital
1008 W. Hazelwood Drive
Urbana, IL 61802

Funded Study: Investigation of canine epilepsy

Study Title: The application of Magnetic Resonance Elastography in the assessment of dogs with idiopathic epilepsy

Purpose of Study/Background/Objectives: The objectives of this study are to assess the feasibility of magnetic resonance elastography (MRE) to detect areas with altered tissue stiffness (elasticity) compared to healthy dogs and to analyze the distribution of these regions in dogs with idiopathic epilepsy.

Inclusion Criteria:
Epileptic dogs

- Age of onset of seizures between 6 months to 6 years of age
- History of 2 or more generalized tonic-clonic seizures, occurring at least 24 hours apart. Dogs that have cluster seizures or status epilepticus must be seizure-free for at least 7 days.
- Unremarkable physical and neurologic examinations
- Patients ***can still*** be enrolled if currently on antiseizure medications (ASMs)
- Normal bloodwork (CBC, chemistry, paired serum bile acids)
- Normal urinalysis

Control dogs

- Dogs that are 6 mos-6 yrs old
- No history of neurologic or major systemic disease
- Normal neuro exam, normal physical exam except for presenting ortho concern
- Undergoing anesthesia for routine orthopedic surgery (TPLO, luxating patella, etc).
- Normal bloodwork (CBC, chemistry, paired serum bile acids)
- Normal urinalysis

Exclusion Criteria: History of other neurologic disease, abnormal neurologic exam suggestive of structural brain disease, concurrent systemic or metabolic diseases

Eligibility Diagnostics: To be enrolled in the study, all dogs will have to have normal lab work, including a CBC, serum chemistry, urinalysis, and pre- and post-prandial serum bile acids. Dogs with normal examinations and lab work will then undergo routine MRI of the brain and cerebrospinal fluid (CSF) collection and analysis. If the brain MRI and CSF analysis are normal, patients are fully enrolled.

Treatment/Protocol: Following routine brain MRI to exclude any potential structural abnormalities, MRE image acquisition will be performed under the same general anesthesia.

Owner Commitments: Two separate visits to the Veterinary Teaching Hospital. The first visit will include the initial exams as well as performing the required bloodwork. A second visit will then be scheduled for the MRI and MRE acquisition. ***Epileptic patients*** will be released at the end of the day following recovery from anesthesia.

For the ***control dogs***, they will then remain under general anesthesia and proceed with their planned surgical procedure.

Compensation: The cost of the entire workup (All lab work, MRI, general anesthesia, CSF collection and analysis) totaling approximately $3500-4000 will be covered by the study.

Costs associated with serum drug levels, medications, or hospitalization are **NOT** covered by the study.

Contact Information: Please feel free to contact the Neurology & Neurosurgery Service at VTHNeurology@vetmed.illinois.edu to refer a patient or for any additional information. Referring veterinarian and client inquiries are welcome.