

Funded Study: Investigation of canine brain tumors

Study Title: Developing a canine pre-clinical imaging model for neurological interventions in gliomas

Purpose of Study/Background/Objectives: We are studying *dogs with suspected brain tumors (gliomas)* to learn how new types of MRI scans can help us better understand these tumors. These special MRI techniques, called *magnetic resonance spectroscopy (MRS) and magnetic resonance elastography (MRE)*, let us look at the chemical makeup and stiffness of the brain. We will compare the MRI findings with what we later learn from the tumor tissue. By applying magnetic resonance spectroscopy (MRS) and magnetic resonance elastography (MRE) following routine MRI, we will be able to provide much more in-depth information regarding tumor characteristics, such as grade and type, as well as biomarkers and changes in the microenvironment of the tumor and the peritumoral region(s).

Inclusion Criteria:

- Dogs with MRI findings consistent with glioma
- Dogs must be able to return the VTH every 2 to 4 weeks for serial imaging

Exclusion Criteria:

- Dogs in which MRI findings are consistent with a different tumor type, other disease process, or normal brain

Eligibility Diagnostics: Any dog diagnosed with a suspected glioma, based on MRI characteristics with the ability to return for sequential imaging every 2 to 4 weeks. Dogs may receive treatments including steroids and chemotherapy over the course of the study. However, any dog undergoing surgery for the brain tumor will not be eligible.

Treatment/Protocol: All dogs will undergo a complete physical examination prior to each imaging event. Dogs will then undergo magnetic resonance spectroscopy (MRS) as well as magnetic resonance elastography (MRE) of the brain under general anesthesia. Following complete recovery, the patient will either be released to the care of the owner or returned to the ICU for continued treatment and monitoring.

Owner Commitments: Dogs will return to the VTH every 2 to 4 weeks for serial acquisition of MRS and MRE under general anesthesia. Treatment and care outside of the study can be performed with the patient's primary institution.

For dogs that pass away naturally or are euthanized for medical reasons, we ask for permission to examine the brain tissue after death. This helps confirm the diagnosis and compare with MRI results. **No dog will be euthanized for the purpose of this study.**

Compensation: All costs associated with the MRE and MRS acquisition are covered by the study as well costs of general anesthesia. The cost of a post-mortem exam (if elected) are also covered.

Additionally, upon completion of the study, a \$500 Visa gift card will be provided. This is provided as a thank-you for your participation and to help offset expenses such as travel.

Costs associated with the initial diagnostic MRI, any treatments, treatment of any complications, and unrelated medical conditions 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.