

Vitamin D status in canine cancer patients and the relationship with dietary vitamin D intake

In humans, epidemiological data indicate that a low vitamin D status is associated with an increased risk of a variety of cancers. Also, it has been shown in human cancer patients that vitamin D deficiency may be linked with poor prognosis, as lower serum vitamin D concentrations are related to reduced overall survival. The mechanism by which vitamin D status alters cancer development is not completely uncovered. Yet, when vitamin D status is suboptimal, cell differentiation is inhibited and proliferation, invasiveness, angiogenesis, and metastatic potential are stimulated, leading to development and/or progression of cancer.

The purpose of this study is to compare the vitamin D status of cancer-bearing dogs (lymphoma, osteosarcoma, and mast cell tumours) with healthy dogs and evaluate the relationship between vitamin D status and dietary vitamin D intake. Also, the prognostic value of vitamin D levels for cancer-bearing dogs will be investigated. The results of this study may eventually lead to new perspectives for cancer prevention and treatment in dogs and perhaps people.

For this study, extra blood will be drawn at the initial visit for all cancer patients and at four additional visits for lymphoma patients and three additional visits for osteosarcoma patients spread over the treatment course. Owners will also be asked to fill out a dietary questionnaire at various visits (initial visit for mast cell tumours, three visits for lymphoma, four visits for osteosarcoma). Owners will also be asked to keep a 1-week food journal and a sample of the dog's food will be requested at those times during the treatment course. There will be no additional cost to the owner for their participation in this study.

As an incentive for owners, this study will cover the cost of the blood work (CBC and biochemistry) done at the initial visit. Additionally, lymphoma patients will receive immunophenotyping at no cost to the owner.

Inclusion criteria:

- Newly diagnosed patients with lymphoma, osteosarcoma, or mast cell tumours

Exclusion criteria:

- <2 years of age
- Clinical signs of systemic/infectious disease (other than cancer)
- Patient receives vitamin D/calcium supplements
- Patient received corticosteroids within 2 weeks prior to study enrollment