



# NEWS FROM THE WORLD OF ONCOLOGY

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## Canine Leukemia

Many different types of leukemia can develop in dogs. However, the most common form of leukemia is lymphoid leukemia. Lymphoid leukemia is defined as an abnormal expansion of the lymphocyte population. In most cases the site of the lymphocyte production is the bone marrow, though in rare circumstances, the spleen may actually be the site of the abnormal cell production. Lymphoid leukemia exists in two separate forms; acute lymphoblastic leukemia (ALL) and chronic lymphocytic leukemia (CLL).



ALL is the more common form. This is a disease of young to middle age dogs with the median age of onset being 5.5 years. ALL is characterized by the sudden and rapid production of lymphoblastic cells. Dogs with ALL are usually clinical ill with a rapid onset of clinical signs noted. With the bone marrow being involved almost exclusively in lymphoblast production, a resultant anemia, thrombocytopenia or neutropenia may develop. This complication will carry additional risks for the patient. A diagnosis of leukemia is made by evaluation of the peripheral blood and by bone marrow cytology. There are times when it can be difficult to distinguish between ALL and CLL and in these circumstances immunocytochemistry can be used looking for CD34 expression. This is an ALL marker and expression of CD34 is associated with a poorer prognosis.

ALL is difficult to treat. Aggressive therapy is absolutely necessary. By convention a modified CHOP based protocol is usually recommended. The response to therapy is typically good but very short lived and the lymphocyte count will rarely ever return to normal levels. Very few dogs actually survive to complete a typical 25-week treatment protocol. The prognosis for ALL is grave to poor.

CLL is less much common compared to ALL. This is a slowly progressive form of leukemia. The neoplastic lymphocytes are well differentiated and appear to have identical morphology to normal lymphocytes. They are small in size, as compared to the large blastic cells seen in ALL. This is typically a disease of older dogs with the average age of onset generally between 10 and 12 years. On a CBC an elevated lymphocyte count may be accompanied by a mild decrease in the other cell lines. Pathology review of the blood smear will usually comment on the normal appearance of the circulating lymphocytes. Most cases of CLL are of T-cell origin and are slowly progressive over time. Dogs with CLL are usually asymptomatic and CLL is often discovered on routine blood work. Because this disease progresses slowly, dogs with CLL live much longer than dogs with ALL. The point at which therapy should be initiated is unclear and controversial. I will delay initiating therapy until the lymphocyte counts increase over 60,000 or until clinical signs of illness become apparent. Dogs with CLL should have their CBC monitored on a monthly basis. Once therapy is started, oral therapy with prednisone and chlorambucil is recommended. Treatment of CLL is palliative and complete remission is not expected. The median survival time for CLL, once treatment has been initiated, is 12 months with 30% of dogs living beyond 2 years.

**DR. KEVIN FINORA IS A BOARD CERTIFIED ONCOLOGIST AND SMALL ANIMAL INTERNIST. HE SEES PATIENTS WEDNESDAY (INCLUDING EVENINGS) TO SATURDAY AT VEC/RC SOUTH. PLEASE DO NOT HESITATE TO CONTACT DR. FINORA IF YOU HAVE ANY CANCER RELATED QUESTIONS.**

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