



ACVIM

Oncology
Fact Sheet

ACVIM Fact Sheet: Canine Lymphoma

Overview

Canine lymphoma (LSA) is a spontaneous, naturally occurring cancer that is similar to non-Hodgkin's lymphoma (NHL) in humans. It accounts for approximately 7% to 24% of all canine cancers. The exact cause of LSA is unknown in virtually all cases. Postulated causes include viral infection, herbicide exposure, chromosomal aberrations, genetic predisposition, and exposure to electromagnetic radiation. Several classification schemes exist for canine LSA.

Anatomically, the multicentric form is most common (80% to 85% of cases), followed by alimentary (gastrointestinal) (7%), skin (6%), and others. Involvement of bone marrow or peripheral blood by cancer cells is called leukemia. Microscopically or based on biopsy results, we classify LSA into low, intermediate or high grades.

Signs & Symptoms

Clinical features of canine lymphoma usually vary based on the organ system involved. It is important to note that this disease can affect any part of the body. Commonly noted signs include painless, generalized, lymph node enlargement. Other signs are very organ specific. For example, skin lymphoma will cause generalized skin lesions that may appear as a rash initially and later progresses to bigger scaly, crusty, inflamed, and hairless lesions. Similarly, vomiting and diarrhea is noted with the alimentary (gastrointestinal) form of lymphoma. Elevated calcium is also noted in some cases and pet owners might report increased thirst in such cases.

An important classification of LSA is B-cell or T-cell sub-types. This distinction is found to be valuable for predicting duration of remission and overall survival. Some reports suggest that dogs with T-cell LSA are at significantly higher risk for relapse and early death after therapy compared with dogs with B-cell LSA.

Diagnosis

Diagnosis of LSA is not a major challenge for dogs that are presented with generalized lymph node enlargement. Confirmatory diagnosis can easily be established by aspiration cytology or by biopsy of the tissue involved. After a diagnosis is established, clinical staging is pursued to determine the extent of cancer involvement. The clinical staging evaluation includes blood work, urinalysis, chest radiographs (x-rays), and abdominal imaging (radiographic or ultrasonographic). Molecular staging can also be performed, which includes molecular analysis of the lymphoma cells. We encourage pet owners to consult with their family veterinarian or local veterinary medical oncologist regarding advanced staging and therapy.

Treatment & Aftercare

Unfortunately, overall prognosis for dogs with LSA is generally poor for long-term survival. However, numerous advances in veterinary oncology have been made over the last couple decades and multi-agent therapy has substantially increased survival times in canine lymphoma. Systemic anticancer chemotherapy is the treatment of choice for canine lymphoma. Many different drugs have been utilized either singly or in combination for the treatment of lymphomas in dogs. Simultaneous (at the same time) or sequential (one drug followed by another) combination chemotherapy has been reported to result in prolonged remission and survival durations. The highest response rates (88% to 96%), the longest disease-free periods (215 to 250 days) and the longest median survival times (350 to 356 days) have been obtained with a combination protocol of L-asparaginase, vincristine, cyclophosphamide, and doxorubicin, in conjunction with decreasing doses of prednisone. The advantage of combination chemotherapy over single-agent chemotherapy is that combining drugs with different mechanisms of action and with differing dose-limiting toxicities may kill more cells and may decrease or delay the emergence of drug resistant cells.

Future directions for treatment with canine LSA include immune therapy with vaccines. These vaccines are not the normal vaccines used to prevent infectious diseases because cancer vaccines are designed to target the cancer cells in the body. Bone marrow transplant or treatment is available at certain centers.

Prognosis

Overall, canine LSA is a very treatable condition, although not curable. Approximately 20% of dogs can survive more than two years with currently available treatments. Most owners are very happy with the clinical outcome and response to therapy.

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