

## **CANINE LYMPHOMA**

### **Lymphoma in the Dog**

Lymphoma is primarily a cancerous condition of the lymph glands in the dog.

It can also affect other organs such as the liver and spleen and occasionally we see forms of lymphoma apparently only affecting a single site such as the skin. As a general rule lymphoma affects anatomically distinct sites throughout the body. Therefore treatment must likewise treat the whole body.

### **What is Lymphoma?**

Lymphoma is a cancer of the lymphocytes, or white blood cells. There are multiple different types of lymphoma in the dog, just as there are in humans, though at the moment this is really a concept that is only just reaching the wider veterinary consciousness. The different types of lymphoma arise from malignant transformation of different types of lymphocytes or as a consequence of different specific DNA aberrations acquired during the life of the individual patient. Most lymphoma types respond favourably to the administration of chemotherapy. There are some that do not and it is important to attempt to identify these cases as other treatments may be indicated.

### **Evaluation**

A diagnosis of lymphoma is usually made on examination of a pathological specimen. This might be a fine needle aspirate biopsy of an enlarged lymph node or other structure or it may be a histopathological examination of a bigger biopsy specimen. At the current time, most diagnostic evaluations stop once the diagnosis of lymphoma has been made. As alluded to above, this is not always ideal. Further evaluations can be performed including immunocytochemistry and cytomorphological and histomorphological assessments. Classification of canine lymphoma into the different subtypes will allow us to provide more specific treatment and to provide more precise estimates of prognosis.

At the moment only a few of the more common subtypes have been fully characterised; as time passes and more experience is gained this will improve. Some alternative, novel therapies are likely to arise for the less common disease presentations and improved outcomes will be seen in the more common subtypes.

Other evaluations are important to understand the general health of the patient before decisions about chemotherapy are taken. These include blood tests and possibly x-rays and ultrasound evaluations. Some types of lymphoma are associated with high blood calcium concentrations, hypercalcaemia. It is important for the well-being of the patient that complications like this are identified and managed appropriately.

### **Treatment Options**

There are countless chemotherapy treatment plans (or protocols) that have been described for the management of canine lymphoma. The principal candidates are described as multidrug chemotherapy protocols. They incorporate the three drugs Cyclophosphamide, Vincristine (Oncovin) and Prednisolone, usually called the COP protocol, or the same three plus a drug called doxorubicin (Hydroxydaunorubicin) usually called the CHOP protocol. The COP protocols have a reduced chance of

inducing unwanted side effects but carry a reduced probability of inducing a complete remission. The average life expectancy on this treatment is approximately 6½ months. The CHOP protocols achieve complete remission in a higher percentage of cases and the average life expectancy is improved as a consequence to approximately 11½ months but the risk of unwanted side effects is that little bit greater.

Chemotherapy induced side effects are usually minor if indeed they are noted at all. Nevertheless it is critical that the risk of these effects is addressed and discussed openly prior to the onset of therapy. In many cases the improvement in the patient's condition substantially outweighs the minor impact of the treatment related side effects leading to an overall improvement in general health despite chemotherapy.

### **Relapse**

Lymphoma goes into complete remission in 70-85% of cases using standard chemotherapy protocols. The duration of this remission is variable. On relapse of the disease, it is often appropriate to consider alternative therapy to attempt to regain control over the tumour. There is a very strong association between long term survival and whether or not patients regain complete remission of their disease. Sometimes it is appropriate to repeat treatment with the "induction" protocol which allowed them to achieve complete remission in the first place. In other cases it is more appropriate to employ a new "rescue" protocol. "Chemotherapy rescue" may be something that requires referral to a specialist centre.

### **Quality of Life**

It is tremendously important to emphasise that patients undergoing chemotherapy (or any other cancer therapy for that matter) do so because their team of carers, the primary veterinary surgeon, the veterinary oncologist and the family at home, all feel that the treatment is improving quality of life at all times. Chemotherapy and cancer rightly carry a certain stigma. We take great pains to ensure that any potential side effects are discussed fully prior to embarking on a course of cancer therapy. This way our owners make informed decisions about the treatment choices they have for their pets. The aim of our cancer therapy is to promote a good quality of life first and foremost and life expectancy second.

(with thanks to Davies Veterinary Specialists)