

# CANINE T-CELL LYMPHOMA



## What is T-cell lymphoma in dogs?

T-cell lymphoma is a cancer of a type of white blood cell called a lymphocyte. Lymphocytes are found throughout the body – both in the bloodstream and in various tissues and they act to fight infection. There are two types of lymphocytes: B lymphocytes (B cells) and T lymphocytes (T cells). Lymphoma can develop from either type of cell and occurs when they grow and divide in an uncontrolled fashion. They invade normal tissues and prevent them from functioning normally. The most common type of lymphoma affects the lymph nodes, but other tissues such as the liver, spleen, intestines, kidneys, and bone marrow can also be involved. Canine T-cell lymphoma (TCL) represents a wide spectrum of diseases with varying responses to treatment and prognosis. The most common form of T-cell lymphoma in dogs is peripheral T-cell lymphoma (PTCL).

## Symptoms

Most dogs with T-cell lymphoma usually have painless lumps, often in the neck, armpit, groin, and back legs. These are swollen (enlarged) lymph nodes. They usually grow quite quickly over a few weeks. Lymphoma can also develop in other parts of the body, a so-called 'extra-nodal' disease.

The exact symptoms depend on where in the body the lymphoma is. They can be very variable depending on what organs or tissues are affected. For example, lymphoma in the stomach or bowel can cause abdominal discomfort, diarrhoea and/or vomiting. Lymphoma in the chest can cause a cough or breathlessness. Other symptoms can include general lethargy, loss of appetite, weight loss, fever and excessive drinking and urination. The latter can be caused by increased blood calcium levels which is a common finding in dogs with T-cell lymphoma. Sometimes dogs with T-cell lymphoma can be very unwell.



### Location of the Dog's Peripheral Lymph Nodes



### Diagnosis

The main way to diagnose T-cell lymphoma in dogs is to take a sample from the tissue that is affected. This is usually a lymph node but could be an organ in the body. Samples can be collected either by fine needle technique or tissue biopsy. Fine needle aspirate is a simple procedure using a small needle to collect cells from the tissue. This procedure is quick and can be carried out without any sedation in most cases. From the fine needle aspirates taken from the glands, we can also perform a test flow-cytometry (takes ~2-3 days to have results back) or immunocytochemistry (takes up to 2 weeks) to differentiate between a B cell or T cell lymphoma.

In some instances, we need to take a biopsy under general anaesthesia, involving the removal of a larger sample of tissue; this is usually carried out if the results of the fine needle aspirates are not conclusive.

To allow evaluation of internal lymph nodes and organs, patients usually have chest x-rays and an ultrasound scan together with needle biopsies. Mild sedation is usually required for these procedures. This process is known as staging, and it is important because the stage of the disease (how advanced it is) affects the prognosis. For this reason, on some occasions, we also recommend samples of the bone marrow to investigate whether or not cancer cells are present. This procedure is carried out under a short general anaesthetic. Blood sampling is also performed to assess a patient's general health status and to check for any sign of lymphoma in the bloodstream.

Providing the patient is well and clinically stable all of these tests are done on an outpatient basis and the results are usually available within a few days for the fine needle aspirates and 10-14 days for any tissue biopsy results. Staging is not mandatory in many cases of lymphoma and you may decide not to have it after a conversation with your oncologist.

### Treatment

The aim of treatment is quality of life over quantity. Chemotherapy is the treatment of choice for lymphoma because the cancerous cells are usually spread throughout the body. The goal is to induce "remission" by killing the cancer cells. "Remission" means that there is no visible evidence of lymphoma. However, it is likely that some cancer cells will still survive and eventually these cells grow and the lymphoma may become evident again ("relapse").

Dogs with T-cell lymphoma are treated with a short course of chemotherapy. The most commonly used chemotherapy protocol is called LOPP or LHOP. The drugs used in this protocol are vincristine, lomustine, procarbazine and prednisolone or lomustine, doxorubicin, vincristine and prednisolone (all of which are human chemotherapy drugs). The protocol consists of a total of 16 weeks which is divided into four 'cycles'. Patients need to come into the hospital every one-two weeks for injections of chemotherapy and there are also tablets to take at home. A blood test is performed before each treatment to check the blood cell count to make sure it is safe to administer chemotherapy. Dogs usually have the treatment as an outpatient and go home the same day – the majority do not require sedation. Each appointment usually takes around a few hours.

Chemotherapy agents can be excreted in the urine and faeces, and care must be taken when handling your dog's waste. You will be advised of appropriate precautions, and it is important to note explicitly that pregnant women should avoid contact with the dog's waste following chemotherapy.

### Outcome

In dogs, it is very uncommon to cure lymphoma. The treatment aims to make your dog feel better for as long as possible with minimum side effects. Survival times for dogs with T-cell lymphoma are variable and depend on the tumour sub-type and extent of the disease (stage). For the most common type of T-cell lymphoma (PTCL), the average survival time with treatment is usually around 9-12 months.

With only steroids and symptomatic treatment (palliative care) the average survival time is around 2-3 months, but this can vary. Without any type of treatment, the survival time is usually only a few weeks.

## Complications

Most dogs undergoing chemotherapy for lymphoma experience a normal quality of life. Side effects are rare (<20% cases) and in very rare occasions may require hospitalisation. Most side effects are managed at home only with symptomatic treatment and usually resolve within a few days. The main side effects of chemotherapy are:

- + Gastrointestinal: mild vomiting, diarrhoea and inappetence can be seen. We use anti-nausea medication to prevent this as much as possible.
- + Bone marrow suppression: chemotherapy can reduce the white cell count, and we perform regular blood tests to monitor for this. A low white cell count can increase the body's susceptibility to infection which in very rare occasions might be life-threatening (sepsis).
- + Doxorubicin can cause heart damage (cardiotoxicity) but this is a cumulative effect after multiple doses. To reduce the risk of this happening we may perform a heart scan in patients with known heart disease or breeds at high risk of heart problems.
- + Lomustine can cause reversible liver damage. After each dose of lomustine patients are therefore discharged with liver supplement tablets to minimize the risk of this happening.

Please monitor your pet closely after each treatment and telephone us if you feel your pet seems ill or if you have any questions or concerns (01268 564664).

## What happens when treatment is complete, or the lymphoma comes back?

Once the treatment is completed the clinician will discuss follow-up appointments for monitoring. These can be done either with us or your local practice if more convenient. Initially, we usually advise monitoring every month for the first two months and then reducing the frequency to every three months until relapse occurs (the lymphoma comes back). Monitoring usually involves a physical examination performed by a veterinary surgeon. Blood tests and scans are only performed if lymphoma relapse is suspected.

When the lymphoma relapses then we usually advise rescue chemotherapy which involves another LOPP or LHOP protocol unless relapse occurred during treatment or within one month after completing treatment. If this occurs, we would elect to switch to a different chemotherapy protocol.

**If you have any further questions please do not hesitate to contact the hospital.**



Visit us:  
[southfields.co.uk](https://southfields.co.uk)

**Southfields**  
veterinary specialists

PART OF  
**LINNAEUS**