

Lymphoma in the cat

Lymphoma is a type of malignant cancer, involving particular types of cells, called lymphocytes. Lymphocytes are found in many organs in the body including the gastrointestinal tract, lymph nodes (found all over the body), skin, liver, kidneys, spleen, nervous system, nose, bone marrow, etc, basically everywhere in the body contains lymphocytes and so lymphoma is a tumour which can occur in any of these locations. Lymphoma is the most common type of tumour encountered in cats, and is seen relatively commonly.

Some types of lymphoma are associated with feline leukaemia virus (FeLV) infection, but it is certainly not the only factor in the development of lymphoma in cats, and many cats with lymphoma do not have FeLV infection. Generally, lymphoma induced by infection with FeLV tends to occur in younger cats, whereas lymphoma unrelated to FeLV is more common in older cats.

The clinical presentation and the prognosis for cats with lymphoma depends largely on the location of the tumour. Lymphoma is generally divided into different anatomical classifications known as mediastinal, gastrointestinal, multicentric, and miscellaneous (extra-nodal) sites (which includes organs such as the nose and kidneys).

Mediastinal (thymic) lymphoma

This describes lymphoma of the thymus gland and mediastinal lymph nodes, which are structures in the front of the chest (in front of the heart). This type of lymphoma can grow very large filling the front of the chest cavity resulting in breathing difficulty. The tumour can also compress the oesophagus (the tube joining the mouth to the stomach) and so sometimes difficulty swallowing food and/or regurgitation of food is seen. There is also frequently a build up of fluid within the chest which can contribute further to difficulty breathing.

Most cats with this form of lymphoma are very young, usually less than 2 years of age. Siamese and Oriental breeds are most commonly affected. However they can often respond very well to treatment and can have a good prognosis.

Gastrointestinal lymphoma

This can involve any part of the gastrointestinal tract, ie, the stomach, small intestine or large intestine. The tumour may be focal (one or more large masses) or diffuse (generalised thickening of the intestine). There may be involvement of other abdominal organs in some cases. Clinical signs may include vomiting and/or diarrhoea, weight loss and either an increased or decreased appetite

This type of lymphoma typically occurs in middle aged to older cats, often between 6 to 9 years of age. Gastrointestinal lymphoma can be further classified into small cell or large cell and the treatment and prognosis very much depends on the part of the gastrointestinal tract involved, whether it is focal or diffuse, and large cell or small cell.

Multicentric lymphoma

Cats with multicentric lymphoma have tumours at more than one site. This may involve multiple lymph nodes such as those under the jaw, behind the shoulder, in the groin area and at the back of the legs, and there may also be involvement of internal organs. Clinical signs with this form of disease vary, but include noticeable lumps in the areas described above, and cats may also be unwell (not eating, losing weight, etc).

This form of lymphoma is less common in cats than mediastinal, gastrointestinal and extranodal but is most commonly seen in cats 3 to 5 years of age, and may be associated with FeLV infection.

Extranodal/miscellaneous lymphoma

Miscellaneous/extranodal forms of lymphoma are quite common in cats. This encompasses localised forms of lymphoma where the tumour does not involve the GI, haemopoietic or lymphoid tissues. Areas most commonly affected include the central nervous system, kidneys, skin, and nasal cavity. Of these the nose is the most commonly affected area. This is seen in older cats that may present with a nasal discharge. The prognosis for nasal lymphoma can be quite good. The prognosis for other sites varies. Sometimes there may be tumours at more than one site, and an association has been noted between the development of renal and nasal lymphoma in some cats. Clinical signs relate to the site of the primary tumour, the average age of affected cats is 5 to 9 years.

Diagnosis of lymphoma

Definitive diagnosis of lymphoma is based on assessment of tissue samples, demonstrating abnormal lymphocytes. The investigations performed will depend on the clinical signs and location of the disease. Investigations will likely include blood tests, x-rays and ultrasound examination. Then, depending on the localising signs, may involve endoscopy of the gastrointestinal tract, drainage of fluid from the chest, fine needle aspirates or biopsies of organs, bone marrow biopsy, rhinoscopy (looking up the nose), etc.

Therapy of lymphoma

therapy of lymphoma

Lymphoma is a type of tumour that in some cases can respond very well to chemotherapy. Many people worry about chemotherapy and the side effects that it may cause. However the aim of chemotherapy in animals is to maintain the best quality of life with minimal side effects. The chemotherapy isn't aiming for a cure so it isn't the same type of drugs or same doses used in people that may cause a lot of side effects because they are being given to try and achieve a cure.

There are possible side effects, so close monitoring is essential and prompt action required if any side effects are seen. However, provided that these precautions are taken, most cats tolerate these drugs very well with very minimal side effects.

Potential side effects include:

1. Suppression of the bone marrow

The white blood cell type (neutrophil) which normally prevents development of serious bacterial infections occurring, is reduced. If this happens the cat can be at risk of developing severe life-threatening infections. This is the most serious potential side effect however it can be easily avoided in most cases if appropriate monitoring is performed. A blood test needs to be taken before each chemotherapy treatment (weekly in the initial stages and then about every 3 weeks thereafter). If the neutrophils are low then further treatment is delayed until they have normalised.

2. Gastrointestinal side effects (nausea, vomiting and diarrhoea, inappetence)

With the drugs most commonly used, and at the recommended doses, these effects are uncommon. However some cats will develop gastrointestinal side effects of varying severity. Most of the time they can be easily managed with anti-sickness medications and appetite stimulants. If more severe or persistent gastrointestinal side effects occur then the particular drug causing them may be stopped and an alternative drug tried which may be better tolerated.

3. Extravasation of drug

The drugs that are administered intravenously can be an extreme irritant if inadvertently administered outside of the vein. This means that a catheter must always be inserted into the vein before the drugs can be given. This can sometimes be problematic in wriggly cats, or very small cats, or overtime if multiple injections have been given the veins can become very difficult to inject into. This is always therefore something that is considered in the choice of drug.

Lots of different chemotherapy drugs are available and are associated with different methods of administration, different frequencies of administration, and different risks of side effects. Usually a combination of different drugs is used to try and maximise the effect of the drugs whilst minimising their side effects.

The most commonly used protocol involves three different drugs, two chemotherapeutic drugs and a steroid (prednisolone). An 'induction' phase of treatment is initiated first, where one of the drugs (vincristine) is given intravenously once a week for 4-6 weeks, and then the 'maintenance' phase follows with administration once every 3-4 weeks. Being an intravenous drug this has to be given within the veterinary practice. The other drug (cyclophosphamide) can be given intravenously or as a tablet and is given throughout the induction and maintenance phase once every 1-3 weeks, depending on the weight of the cat and the route of administration. In addition the steroid treatment is given as tablets, daily throughout the treatment. Most cats cope very well with this particular regime with very few, if any, side effects.

This is just one type of protocol but many other protocols and different drugs exist which can be more suitable to particular types of lymphoma, and/or particular patients. The decision about treatment protocols should take into account not just the type of lymphoma, potential side effects and owners wishes, but also practical considerations such as how well the cat copes with travelling to the vets, how well the cat copes with being in the vets, how easy it is to administer tablets to the cat, if collecting blood samples and administering drugs intravenously can be done without causing the cat distress or not, and of course financial considerations.

Prognosis

Without treatment, the prognosis for all types of lymphoma is poor. However, with treatment the prognosis can be reasonable. It is very variable depending on the individual cat, and in particular the type/location of the lymphoma. The best prognosis is usually for those cats with mediastinal lymphoma (especially if Siamese or Oriental), some of the extranodal forms (particularly nasal) and the diffuse small cell lymphoma of the gastrointestinal tract. With these forms, it is not uncommon to achieve remission periods of up to or over a year.

Other forms such as large cell gastrointestinal lymphoma and other extranodal forms (eg, renal), the prognosis can be



Abdominal radiographs of a cat with multicentric lymphoma showing sublumbar lymphadenopathy present before therapy (top) and reduced/absent after therapy

very poor, sometimes not managing to achieve remission at all, with survival times of sometimes only a couple of months at best. It is important to remember that treatment is not aiming to cure the disease, it is aiming to achieve remission and keep the cat in remission with a good quality of life for as long as possible.

Occasionally with some types of lymphoma (eg, mediastinal lymphoma in Siamese/Oriental, and nasal lymphoma) a cure is achieved, but this is less common. Once recurrence occurs, although 'rescue' protocols can be used, it appears to be very difficult to achieve reversal and induce remission for a second time, and the different drugs that are available to use after the initial drugs have stopped working, tend to be associated with a higher risk of side effects.

Deciding whether to start chemotherapy or not

There are obviously many pros and cons to treatment, and the decision of whether or not to pursue chemotherapy can often be a difficult decision for owners. All of the above needs to be taken into consideration. However, it is unpredictable for each individual cat, what their response to chemotherapy will be, and how well they will tolerate the drugs in terms of both side effects and administration/trips to the vets, etc.

One of the best prognostic indicators in cats is their initial response to chemotherapy. This is very helpful because it means that if chemotherapy is going to be useful, you will normally see a good response within 1-2 weeks. So, when an owner is deciding whether or not to treat with chemotherapy, they should be aware that they are not at this stage committing to long courses of treatments. Treatment can always be tried for 1-2 weeks, and if the cat is tolerating it well and there appears to be a good response, then the owner can decide if they wish to continue. If there doesn't appear to be a good response, and/or the cat is not tolerating the drugs well, then they can decide to stop treatment at anytime. In most cases therefore, it is usually worthwhile trying chemotherapy treatment, but owners should be aware of all the above factors and take them into consideration when making their decision.

August 2009

©This information sheet is produced by the Feline Advisory Bureau

The Feline Advisory Bureau is the leading charity dedicated to promoting the health and welfare of cats through improved feline knowledge, to help us all care better for our cats. Currently we are helping almost 4 million cats and their owners a year. If this advice has helped you care better for your cat please enable us to help others by **making a donation**. To do this you can either go online or send a cheque to the address below (made payable to 'Feline Advisory Bureau')

FAB, Taeselbury, High Street, Tisbury, Wiltshire, UK, SP3 6LD
Tel: +44(0)1747 871 872 Fax: +44(0)1747 871 873

www.fabcats.org

registered charity no: 1117342