

Chemotherapy in Small Animals

Chemotherapeutic drugs (anticancer drugs) are used in the treatment of a variety of cancer types in pets. In order to treat your pet, we need to first understand what type of cancer they have and how far it has progressed. This information will help us recommend the best treatment protocol (type of drugs, dose and schedule) to use for each individual patient. We will explain and discuss our recommendations with you, including any potential side effects and limitations.

When do we choose chemotherapy?

There are some diseases for which chemotherapy is the primary treatment method such as lymphoma while there are others for which chemotherapy is used along with radiation and/or surgery. Chemotherapy can also be used in those situations for which other treatment options do not exist. The following is a list of situations where chemotherapy may be recommended for your pet:

- Tumors that are sensitive to chemotherapy
- Multicentric disease (tumors occurring at more than one site)
- Metastatic disease (cancer that has already spread)
- Non-resectable disease (tumors that cannot be removed surgically)
- As follow-up therapy after surgery and/or radiation therapy when we are treating tumors that usually metastasize (spread) in the course of the disease
- As follow-up therapy after surgery when the tumor has not or can not be completely removed

What are chemotherapy side effects?

Compared to people treated with chemotherapy, we see fewer side effects in companion animals receiving these drugs because we use lower doses and do not combine drugs as often. The risk of significant side effects is less than 10% and may include gastrointestinal upset (vomiting, diarrhea, loss of appetite) and/or low white blood cell counts (bone marrow suppression). Most of the chemotherapeutic drugs we use are not only toxic to cancer cells but to all rapidly dividing cells. Normal cells of the body that are rapidly dividing include cells in the bone marrow, intestinal lining and hair follicles. This means that they are more likely to be damaged by chemotherapy which is why we see the above side effects secondary to chemotherapy. One note in animals is that their hair coat grows differently so most pets do not lose hair like in human chemotherapy patients. Whiskers may fall out in both cats and dogs. It is also possible the hair will grow back slower in areas that have been clipped while the patient is receiving chemotherapy. Exceptions to the hair loss rule are dogs that have continuously growing hair coats (non-shedding breeds such as poodles) in which case we can see thinning of the hair coat and excessive hair loss. Hair growth will resume when chemotherapy is stopped. Some drugs have side effects specific to that drug.

Bone marrow suppression may cause a drop in the white blood cell count resulting in an increased susceptibility to infections. This can happen 7-14 days after treatment depending on the drug administered. Complete blood counts (CBC's) are obtained on a regular basis to monitor the white blood cell count. Animals with low white blood cell counts that are asymptomatic (experiencing no symptoms) are often placed on prophylactic oral antibiotics. Animals with evidence of a systemic infection (sepsis, weakness) may require supportive care including intravenous fluids and antibiotics for 24-48 hours depending on the situation.

Gastrointestinal signs may be mild, moderate or severe. These side effects may occur two to five days after chemotherapy treatment. Oral anti-nausea and/or anti-diarrheal drugs may be prescribed and many times are all that is needed to help your pet feel better. For mild and moderate signs, withholding food and changing the diet to bland foods may help as well. Although infrequent, some dogs may develop severe vomiting or diarrhea requiring hospitalization and fluid therapy.

Less than 10% of all pets receiving chemotherapy will experience the severe side effects described above requiring hospitalization. For those who do experience the more severe side effects, proper management results in most animals recovering uneventfully within a few days. If an animal experiences severe side effects, we will lower the next dose of that drug, skip that drug entirely, change to a different drug in an attempt to avoid future complications, or discontinue therapy.

Most of our patients experience only mild side effects such as transient nausea, lethargy, reduced appetite and/or diarrhea for a few days after treatment. These side effects are usually transient and resolve within one to two days. If your pet is treated with drugs known to cause side effects, we will give you instructions on what to do if and when there is a problem.

How are the drugs given? How often are treatments? How long do treatments last?

This will vary depending on the type of cancer and drugs being used. Some of the drugs used are oral medications (pills) that you give at home while others are brief injections or intravenous infusions that are given at the hospital. In most cases, chemotherapy is done on an outpatient basis during a recheck appointment so that most patients are only at the hospital for 1 hour. There are a few chemotherapy agents that need to be given as an infusion over 4-8 hours. Your doctor will discuss scheduling appointments based on the chemotherapy protocol to be used.

The duration of chemotherapy depends on the type of cancer and stage of the disease. Some animals require chemotherapy for the rest of their lives while in other cases treatment may be discontinued within a period of months if the cancer is in remission (i.e. there is no detectable evidence of disease). Chemotherapy is usually resumed when there is tumor recurrence.

If we are treating a patient that has visible disease (as in a measurable mass or lymph node), we will need to treat this patient for 4-6 weeks before being able to determine if a particular drug is effective unless of course the tumor gets larger during treatment. If the drug does not seem to be effective against the cancer your oncologist will discuss other treatment options.

What can you expect from chemotherapy?

Based on veterinary literature and our years of personal experience working in the field of oncology (from what we know about a variety of cancers in pets) we may be able to give you a prognosis regarding life expectancy with and without treatment. However, in a lot of instances this information is not known and can be difficult to predict. In most cases, we are not able to cure our cancer patients but may be able to provide palliative therapy with treatment - prolonging your pet's life and slowing down the progression of disease while maintaining a good quality of life at home. Regardless of the type of treatment pursued, we always consider your pet's quality of life to be the most important factor when providing treatment options.