

Chemotherapy – Frequently Asked Questions

What is cancer?

Cancer is the uncontrolled growth of cells in the body. If the cells are localized to one part of the body we refer to them as a tumor. If they spread through many areas we call it metastasis, or for certain cancers, systemic disease.

How do we treat cancer in pets?

Treatment begins with diagnosis. Depending on your pet's symptoms, diagnostic measures may include: blood work, radiographs (x-rays), ultrasound, MRI/CT, fine needle aspirate (the removal of a small number of cells using a needle) and/or biopsy (the removal of a larger piece of tissue) to be analyzed by a pathologist. Once we have a diagnosis, treatment options may include surgery, chemotherapy, radiation therapy, immunotherapy, or a combination of treatments. Many people should be involved with your pet's treatment starting with you, your regular veterinarian, and your oncologist. Together we can choose a treatment plan that is right for you and your pet.

What is chemotherapy?

Chemotherapy refers to drugs that are used to inhibit the growth of or kill cancer cells. It can be the primary treatment for some types of cancer; in other cases it is used in conjunction with radiation or surgery. Usually in these cases surgery or radiation treat the visible cancer and chemotherapy is used to destroy any cancer cells that escaped the area and are still too small to detect. Chemotherapy drugs damage cells that grow and divide quickly, which is why it is so effective on cancer cells. Unfortunately most chemotherapy drugs do not specifically target only cancer cells, but may also affect normal cells that are in the process of dividing and growing. The body does have normal cells that divide rapidly which accounts for the side effects that can be seen with chemotherapy. The normal cells affected the most are hair follicles, bone marrow and the gastrointestinal tract.

Because the body needs time to recover from the loss of these cells we give chemotherapy drugs in intervals. Different types of cancer respond to different drugs. Sometimes we just use one drug and other times we will use a combination. Doses are given at intervals from daily to monthly, depending on the type of cancer and drug along with how far along we are in treatment. Chemotherapy drugs are administered intravenously, in the muscle, or given orally at home. The duration of treatment depends on the type of cancer. Treatment protocols range from twenty four to fifty two weeks with some requiring maintenance treatment which can last an indefinite period of time

What are some of the side effects of chemotherapy?

Many people are scared of the term "chemotherapy" in regards to their pets because they have personal experience or have heard frightening stories about treatment. Chemotherapy in animals is very different than chemotherapy in people. People are treated with very high doses because we want to get rid of the cancer for good. People can understand why they are getting so sick and they know that they will eventually get better. They are able to make the conscious choice to go through months of illness in exchange for years of health. Animals do not understand that something good can come out of being so sick. In fact when they are sick for too long some will lose their will to live.

Because of this we use significantly lower doses in animals to minimize the side effects. Unfortunately we are not expecting to fully kill all of the cancer with chemotherapy. Our goal is not only to keep the cancer

inactive (in remission) but to allow your pet to live a good happy life for however long that may be. The majority of patients experience mild side effects that are easily controlled with medications. Some patients experience no side effects while others are more sensitive to certain drugs. If they do experience more severe side effects some patients will require hospital care. If this should happen we will adjust their treatment to minimize the side effects.

The primary sites of normal cells affected by chemotherapy are as follows:

- **Bone marrow:** Bone marrow is where the blood cells are produced. Chemotherapy can temporarily decrease the number of white blood cells, which help fight infection, and platelets, which are responsible for forming blood clots to stop bleeding. These effects usually occur three to seven days after treatment. Although this is usually temporary the body still needs time to produce sufficient cells to be back to a normal level. Bone marrow suppression can be more severe when Carboplatin, Doxorubicin (Adriamycin), or Lomustine (CCNU) are administered.
- **Gastrointestinal tract:** The most common side effects are nausea, decreased appetite, vomiting, diarrhea and lethargy. If any of these side effects occur it will usually happen two to five days after treatment. Fortunately we have reliable medications that can help to minimize and control these side effects. More patients will experience these when they receive Carboplatin or Doxorubicin (Adriamycin) therefore we will send patients home with preventative medications to help minimize the symptoms.
- **Hair follicles:** Hair loss (alopecia) after chemotherapy manifest most profoundly in non-shedding breeds of dogs such as poodles, bichon frises, and most terriers. Depending on which drugs are used and the longevity of the protocol the alopecia can range from thinning to complete loss, which is unusual. The hair does grow back, but it may change color and/or texture. Doxorubicin (Adriamycin) is the drug that generally causes the most pronounced alopecia.

What are some side effects and what can I do?

Loss of appetite: This is one of the more common side effects and may occur after a dose of any chemotherapeutic drug. It can last a day or two, which would probably be indicative of some nausea. If this continues for several days we may need to start your pet on an anti-nausea medication. Feed frequent small meals! Patients on chemotherapy may become finicky eaters. Preferably keep your pet on their normal food, but if need be, you may add in some variety of bland foods to help increase their interest in eating. The important thing to remember is to keep the foods “bland”, meaning no high fat or heavily spiced foods. Some good options are:

- Boiled chicken or hamburger. Canned chicken in water (not gravy) will work also. Mix the meat with some white rice or boiled potatoes.
- Low fat yogurt or cottage cheese
- Cooked eggs. These can be easily prepared in the microwave, but no butter!
- Canned food (if your pet normally eats kibble). Remember to use a bland or sensitive stomach formulation.
- Baby food works well. Use products that are meat only, and with no onion powder.
- Cooked fish or canned fish (in water) can entice dogs and cats
- If you need to encourage your pet to drink for some reason, adding a little low fat, low sodium broth to water can be helpful

Vomiting: If your pet is vomiting, **pick up all food and water.** Do not allow access to either for 12 hours. Sometimes people think this may dehydrate their pet, but actually, if a pet drinks water and then proceeds to vomit it will become more dehydrated than if it drank nothing. After 12 hours offer a small amount of water or ice. If your pet does not vomit, continue to offer small amounts of water at intervals. After 4-6 hours offer a small amount of bland food. Gradually mix in the normal diet over the next few days. If your pet continues to vomit after following the above instructions, please do not hesitate to call our clinic as we may prescribe an anti-nausea medication for your pet.

Chemotherapeutic drugs which are more likely to cause vomiting are Doxorubicin (Adriamycin), Cisplatin, Streptozocin (Zanozar), Carboplatin, and Elspar (L-asparaginase)

Diarrhea: Diarrhea is not as serious a concern as vomiting as long as your pet maintains adequate hydration and energy levels. Sometimes there may be small drops of red (fresh) blood in the stool which is merely a sign of irritation of the bowel. Diarrhea sometimes takes several days to a week to resolve, and one at home remedy is adding white rice to your pet's food to bulk up the stool. Also try to avoid any food or treats besides your pet's normal food to minimize irritation. There are some medications we can prescribe if the diarrhea is not resolving. We would prefer that you **not use** human products like Kaopectate or Pepto-Bismol as these contain aspirin products. **Do not** use products like Imodium or Lomotil as these tend to stop intestinal motility.

Increased hunger, thirst and/or urination: This is not caused directly by any of the chemotherapeutic drugs, but rather by certain medications we may use in conjunction with the chemotherapy.

- **Prednisone:** This is a steroid that is often used during the treatment of cancer. It causes increased urination (volume and frequency), hunger, and thirst. Keep in mind that while your pet may seem extremely hungry from this medication, he/she does not need extra food! In fact, many pets tend to gain weight while on prednisone because their owners feel they need more food. Because prednisone causes you pet to form larger volumes of urine, please **do not restrict** his/her water intake as this may lead to dehydration. Also do not let your pet gorge him/herself on water as this may cause vomiting
- **Lasix (furosemide):** This medication is a diuretic, which means that it will cause more urine to be produced. When this happens the pet will drink more. If your pet is on this drug you **must** leave extra water and allow extra trips outside for your dog to urinate. We will send dogs home with lasix if they have received Cytoxan (cyclophosphamide), which can potentially cause a sterile cystitis, or bladder infection. We do not give lasix to cats, but give them fluids under their skin to flush their bladder. The increase in drinking and urination flushes the bladder protecting it from infection.

Lethargy: Lethargy is a lack of energy, and mild lethargy is a common side effect of chemotherapy. Usually starting 3-6 days after the treatment your pet may seem to sleep more or be less interested in play. This should not concern you and should resolve in a few days. However, if your pet seems very lethargic (i.e. will not get up to eat, drink, or relieve him/herself) contact us immediately.

Allergic reaction: Some chemotherapeutic drugs such as Elspar (L-asparaginase), Doxorubicin (Adriamycin), and Pacataxal can trigger an anaphylactic (allergic) reaction. To prevent this we will give your pet an antihistamine, an anti-emetic (anti-nausea) and sometimes a steroid prior to administration of chemotherapy to minimize the risk.

Tissue sloughing: Some drugs must be delivered directly into the vein **only** because they can damage other types of tissues. These drugs are called vesicants. Some vesicants will cause minor irritation (Vincristine, Vinblastine, and Mitoxantrone). Adriamycin (Doxorubicin) and Doxil can cause very severe damage which may require surgery to repair. We take great precautions when giving these drugs, including placing an indwelling intravenous catheter and diluting the drug. We sedate all cats for Adriamycin to prevent movement, and a few dogs also require a mild sedative to discourage movement as well. If you ever notice redness or inflammation near the administration site please contact us immediately at (847) 459-7535.

Change in urine color: Adriamycin (Doxorubicin) may cause the color of your pet's urine to change to reddish-brown for a few days. This should not concern you.

How do I prepare for my pet's chemotherapy appointment?

We ask that all pets are fasted (no food) for 8 hours prior to their appointments. Although this may seem like a lot of fasting for pets that come every week for long periods of time, there is a good reason for this. If your pet needs a diagnostic test because if there is a new abnormality, we may need him/her fasted. If we cannot perform the test you will need to return at a later date. Fasting also minimizes the risk of vomiting before or after chemotherapy. You can also prepare for the appointment by keeping track of any problems or changes you may have encountered between visits so that we can address them. Please also remember to inform us if you need refills of your pet's medication as some of these cannot be called in to a human pharmacy.

What do I do after the appointment?

Please make sure not to over-feed or over-water your pet after the appointment as this can cause or increase nausea/vomiting. Give a small meal and smaller amount of water the evening of chemotherapy and resume normal feeding the next day. Do not try any strenuous exercise with your pet for the first few days as he/she may be tired from the treatment. You may be sent home with various medications. Please note the instructions on any medications we send home with you. Some of the medications can be used on an "as needed" basis and other need to be given in a timely manner.

Please **do not** start using old left over medications from a previous problem unless they are labeled "use as needed". Some anti-nausea and diarrhea medications can be used as needed, but if you are not sure please call us. If your pet received a drug which is administered intravenously, he/she may have a pressure bandage over the injection site. This is similar to a band aid and prevents the vein from bleeding. This should stay on at least 1 hour, but **no longer** than 3 hours to prevent swelling in the paw. If your pet is having problems overnight or on the weekend please feel free to call our emergency department. If your pet is vomiting uncontrollably, having bloody watery diarrhea, or any other problems, please call our emergency department right away or bring your pet in to be seen.

Are there vitamins or supplements I can give my pet with cancer?

There are many websites that will give you information as well as misinformation about cancer in pets. Many of these contain helpful information, but unfortunately, some also give "professional" opinions about treatments which have not been studied in pets. Some of these are actually detrimental in dogs and cats.

Medications and supplements to **AVOID!**

- Garlic in any form
- Grapes or grape seed (grapes have been shown to cause kidney damage in some pets; however it is not known which part of the grape causes the damage)
- Any supplement that claims to boost immunity (i.e. transfer factor, Essiac T, IP6). Some of these are **contraindicated** in certain cancers or may be **counterproductive** when given along with chemotherapy
- Vaccines of any kind

Please ask before giving any medication or supplement to your pet

Medications to continue:

- Thyroid medications
- Heart medications
- Insulin
- Anti-seizure medications
- Heartworm preventive
- Flea and tick prevention

Please remember to inform us of any medications your pet takes regularly

Supplements that **may** be used according to proper dosing:

- Flax seed
- Fish oil
- Daily vitamin tablets
- Milk thistle
- SAM-E
- Glucosamine

Lastly, please remember that your pet is unique and we cannot know how any drug will affect him/her until it is given. The information in this handout is based on average reactions to chemotherapy.

Your pet could experience vomiting after a drug which rarely causes nausea, or have no reaction to another drug which usually does. At the beginning of treatment we will pre-medicate, dose, and prescribe go home medications based on what *normally* happens. After a few cycles, we will tailor these things to how your pet is actually responding to treatment.

Please do not hesitate to contact us with any questions. We can be reached at **847.459.7535** or by email at **oncology@vetspecialty.com**. The oncology department is open Monday through Friday 8am-6pm. If you leave a voicemail or email after these hours we will not respond until the next business day. However, Veterinary Specialty Center has a 24-hour emergency department. Our emergency doctors and technicians are well-trained in caring for oncology patients, so please feel free to contact them with questions if we are not here.

Sincerely,

The Oncology Staff

Medical Oncology

Rhonda Feinmehl, DVM

Blake Marcum, DVM, MS, DACVIM (Oncology)

Richard Sheng, DVM, DACVIM (Oncology)

Veterinary Specialty Center is guided by the belief that companion animals deserve state-of-the-art medical care in a kind and comforting environment. The courage of our patients, the loyalty of their human families, and the devotion of our referral veterinarians inspire our vision. It is sustained by the contributions of our compassionate, knowledgeable and dedicated staff and built upon a tradition of providing unsurpassed healthcare for animals.
