

Southern California Veterinary Specialty Hospital

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CHEMOTHERAPY IN DOGS AND CATS

Chemotherapy is a valuable form of treatment for many types of cancer in dogs and cats. ***Our goal for cancer treatment is to improve the health and quality of life for our patients. We never want the treatment to be worse than the disease.*** Many forms of cancer are not curable, but chemotherapy can often prevent or reduce the severity of symptoms from the cancer and add quality time to your pet's life.

How do chemotherapy drugs work?

Cancer is generally defined as a rapid, uncontrolled growth of cells. Chemotherapy drugs interfere with the ability of a cancer cell to divide and reproduce. Chemotherapy drugs damage cells in different ways. If a combination of drugs is used, each drug is chosen because of its different effects. As the drugs are carried into the blood, they can reach cancer cells all over the body. The drugs are taken up by any cell trying to divide, including some normal cells, such as those lining the mouth, the bone marrow and the digestive system. Healthy cells can repair the damage caused by chemotherapy but cancer cells cannot and they eventually die.

How is chemotherapy administered?

Most often chemotherapy is given by injection in a vein (*intravenously*). Some drugs can be given orally as tablets or capsules and some are injected into the muscle (*intramuscular*) or under the skin (*subcutaneously*). The drugs are absorbed into the blood and carried around the body so that they can reach all the cancer cells.

Rarely the chemotherapy may be injected into a particular body cavity, such as the abdomen or chest (*intracavitary*) or directly into the tumor (*intralesional*). Drugs given in these ways tend to stay in the area in which they are given and have minimal effects on cells in other parts of the body.

How long will my pet receive chemotherapy?

The length of time and frequency of drug administration depends on the type of cancer being treated and how well the therapy is tolerated by the patient. Treatment may be given daily, weekly or monthly. On occasion, therapy is given in an off and on cycle that may include rest periods where no therapy is given. This gives the patient's normal cells a chance to regenerate.

Am I at risk of exposure to these drugs?

For orally administered chemotherapy drugs, it is important that the capsules or pills are kept out of reach of children. If you are pregnant, trying to get pregnant or nursing, it is safest not to handle these drugs. Most oral drugs have a protective coating, but we do recommend that you wear latex or polyvinyl gloves when handling these medication. It is *very important* that you do not cut or crush the pills into pieces or open the capsules, as this can increase your risk of

exposure. A minimal amount of chemotherapy may be excreted in your pet's urine or feces. If you need to handle your pet's excrement, regular hand washing is sufficient to diminish your exposure.

Can my pet be vaccinated while receiving chemotherapy?

We *do not* recommend vaccinating your pet during chemotherapy, especially during the initial treatments. Your pet's immune system may be compromised secondary to both the cancer and the chemotherapy, and it is unknown whether your pet will have the normal beneficial response to the vaccine. Vaccines stimulate the immune system and we do not want your pet's immune system unnecessarily challenged.

Recent literature suggests that most vaccines last at least 3 years, so it is unlikely that your pet's health would be compromised by not receiving a vaccine. There are blood tests available to check some vaccine titers to tell if your pet is still immune to certain viruses.

Please contact us before vaccines are given if you have any questions.

Can my pet receive flea treatment while receiving chemotherapy?

Yes, many of our patients receive Advantage, Frontline, Program or other flea/tick preventative while on chemotherapy. There have been no reports of contraindications using these products with chemotherapy.

Should I limit my pet's activity level while on chemotherapy?

No. The goal of cancer therapy is to improve and maintain your pet's quality of life. We do not want to impose limitations on what he/she can do. Please try to keep your pet's schedule as normal as possible. Walks, trips to the park, playing ball, etc. are okay and good to continue. Listen to your pet to decide how active they wish to be. They may have an occasional tired day, but we hope most days are good days.

Will my pet experience side effects?

With the drug dosages used in veterinary medicine **the majority of animals experience minimal to no side effects**. Despite this, there is a risk of side effects and a small percentage of animals may become ill after chemotherapy. Most side effects occur during the first few weeks of therapy, although they can occur at any time during treatment. If your pet does have side effects, the drug type or dosage will be modified to minimize the chance of side effects recurring. Symptoms of illness can range from a slight decrease in energy and appetite to severe lethargy, fever, anorexia, diarrhea and vomiting. The following are potential adverse reactions and guidelines to help you.

FEVER: The normal temperature for cats and dogs ranges from 100.0 to 102.5 degrees. You can determine your pet's normal temperature by measuring it at the same time daily with a rectal thermometer for the first 3-5 days after the initial treatment. To take the temperature, lubricate the end of a rectal thermometer with Vaseline and insert into the rectum ½-1" for 1-2 minutes. Digital thermometers are safe and accurate. Ear thermometers do not conform to the shape of dog and cat ears and are thus, less accurate. After the first week, you only need to monitor the temperature when your pet appears ill (tired, decreased appetite, etc.) At the first sign of your pet "not looking right", please take the temperature. If it is over 103.0° or is 1.5 degrees higher than normal, antibiotics should be given. If the temperature is over 104.0°, or if your pet is vomiting or severely depressed, your pet will need to be examined and possibly hospitalized. Once you start a

course of antibiotics, you should give the full 5-7 day treatment, even if your pet improves the first day.

NAUSEA: Your pet may become mildly lethargic, have a loss of appetite or even drool. If he/she is still drinking water, not vomiting and has a normal temperature, anti-nausea pills should be given. Continue it for several days until your pet feels well again. Bland diets or over-the-counter acid-blockers may also help. Feeding small meals versus one large meal may also be of benefit. If these symptoms worsen or persist for 24-48 hours, please call.

Bland diets: *For dogs:* low-fat cottage cheese, cooked skinless chicken, lean ground beef or tofu mixed with an equal amount of cooked white rice or pasta, mashed potatoes or dry white toast.

For cats: meat baby food, cooked fish or skinless chicken or canned tuna can be mixed with small amounts of Cream of Wheat or powdered baby rice cereal to maintain stool consistency.

Pepcid AC: Over the counter as 10mg or 20mg tablets
DOGS: 10mg tabs: ½ tab per 20 lbs. every 12-24 hours (1 tab per 40 lbs.)
20mg tabs: ½ tab per 40 lbs. every 12-24 hours (1 tab per 80 lbs.)
CATS: 10mg tabs: ¼ tab per 10 lbs. every 12-24 hours

**Do not use "chewable" forms of these medications, generics are fine.*

VOMITING: If your pet vomits once or twice, but is otherwise feeling well, withhold food and water for 4-6 hours. If no vomiting occurs during that time, offer your pet a few ice cubes to lick and start the anti-nausea pills. If no vomiting occurs after another few hours, you can then offer a small amount of water (¼-½ cup). Gradually offer larger amounts of water and then offer a bland diet. If the vomiting continues or becomes more frequent, please call. Your pet may need to have injections of fluids and anti-nausea medications in order for the digestive tract to rest.

DIARRHEA: Diarrhea without vomiting or fever may be managed with a bland diet until the stools are normal. Then gradually, over 3-5 days, switch back to their regular pet food. Make sure your pet has fresh water at all times. Please call if your pet has diarrhea and is not drinking well, or if the diarrhea is severe, bloody or not resolving with bland diet or over-the-counter medications.

for dogs only: Immodium* 2mL per 15 pounds or 1 capsule (2mg) per 70 pounds every 12 hours.

Do not use "chewable" form

for cats: Kaopectate caplets* (attapulgite) ¼ caplet every 12-24 hours

**Do not use Kaopectate liquid*

CONSTIPATION: Constipation is a rare side effect. Signs include loss of appetite, straining to defecate and scant stools. Offering Metamucil cakes, bran or canned pumpkin to increase fiber may help.

BLOODY URINE: *Cytoxan* (Cyclophosphamide) can irritate the bladder. Signs of bladder irritation include straining to urinate, urinating small amounts frequently and bloody urine. To try to prevent this complication, ALWAYS GIVE THE MEDICATION IN THE MORNING. Encourage your pet to “flush” the medication residue from the bladder by drinking frequently and urinating every 4 hours for 24 hours after the treatment. This can be done by lightly salting the food, giving bouillon or popsicles (to dogs) or giving canned tuna water (to cats). If you notice signs of bladder irritation, stop the drug and call. We will likely request that you bring your pet in so we can get a sterile urine sample for evaluation. The *Cytoxan* will then be discontinued and a new drug may be given instead.

HAIR LOSS: Most animals do not experience hair loss. Shaved areas will grow back slowly. Cats may lose their whiskers and guard hairs. Dogs that need to be clipped and groomed such as poodles, terriers, etc. are likely to have mild to moderate hair loss. The hair will regrow once the treatments have been finished. Occasionally the hair will grow back a different texture or color.

PREDNISONE and DEXAMETHASONE (steroids):

If these medications are used as part of your dog's therapy, expected side effects include **increased water intake, appetite, urination, restlessness and panting**. Your dog must have access to water at all times. If your pet receives this drug only once a day, it is helpful to give it in the morning. Do not increase the amount of food you give your dog or excessive weight gain may occur. Your dog may feel less hungry if you divide his/her normal amount of food into two or more meals throughout the day. Cats rarely show side effects with steroids.

Remember to tell us about **any** reactions your pet may experience, even mild ones, at his/her next chemotherapy appointment. Our goal and commitment to you and your pet is to ensure that his/her quality of life while undergoing treatment be as normal as possible. In the vast majority of cases we can adjust the drug dosage, timing of administration or substitute another drug to greatly lessen the chance of a problem developing. Your feedback on how your pet is handling the treatments is vital for us to optimize his/her chances of experiencing good health.

**PLEASE CALL IF ANY OF THESE SIDE EFFECTS PERSIST FOR MORE THAN 48 HOURS,
OR SOONER IF THEY SEEM SEVERE.**