



Veterinary Oncology

Many of the neoplastic diseases we encounter in veterinary practice require a multi-modality approach for successful outcome or even local tumor control. The three principle modalities are: surgery, radiation therapy and chemotherapy. Immunotherapy has many theoretical advantages, but to date the only product commercially available is the canine melanoma vaccine. For this handout, chemotherapy will be the primary topic.

Principles of canine chemotherapy: Before chemotherapy is instituted, the patient should be fully evaluated and staged so that an accurate protocol and prognosis can be reviewed with the owner. The veterinarian and the owner should be knowledgeable and comfortable with the potential benefits and risks associated with this method of treatment.

The clinician must be familiar with specific indications, uses, dosage, timing, resistance and toxicity of the chemotherapeutic agents available.

Chemotherapy is indicated for a wide range of situations. The most common are lymphoma, leukemia, multiple myeloma and other neoplasms that have a high risk of metastasis (e.g. osteosarcoma, hemangiosarcoma and high grade carcinomas). In most chemotherapy protocols there is an induction phase and, once remission is achieved, a maintenance phase. During the entire time on chemotherapy the patient must be carefully monitored for toxicity. This includes owners' observations, physical exam findings, hematological abnormalities, changes in blood chemistry and radiographic changes.

One of the most difficult situations is treating dogs with relapsing lymphoma. In the past, rescue protocols have had poor response rates and a higher level of toxicity. A recently published rescue protocol in JAVMA (Aug 15, 2007) utilized a combination of Doxorubicin and Temozolomide orally. In this study, over 70% of dogs had a complete or partial response. The level of hematologic toxicosis was fairly low. The Temozolomide is given orally for five days in a row, after every Doxorubicin treatment. The dose of Temozolomide was 60 mg/m²/24 hours and escalated up to 100mg/m² if there was no significant toxicity. The cycle was repeated every 3 weeks if the dog had a favorable clinical response.

Chemotherapy handling guidelines are important to the personnel, the owner and the veterinarian; there are special hoods to mix chemotherapy agents, special handling when puncturing the drug vial, wearing gloves to administer both injectible and oral chemotherapy drugs and disposal of containers, syringes, needles, catheters and soft chemotherapy waste (gowns, gloves, masks and chemo mats). OSHA has some published guidelines for the proper handling of chemotherapy drugs and ancillary products.

Chemotherapy is an extremely important part of clinical oncology. There are many tumors that are successfully controlled. The clinician is responsible for choosing the protocol, communicating with the client, personnel safety and monitoring the patient for response to treatment and for any toxicity.