

Oncology - New Opportunities for Cancer Patients in Clinical Trials

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Dogs and cats have a relatively high incidence of cancers that have similar biological behavior, and response to therapy to that of people. Recent studies have shown that there are more similarities between the canine and human genome than human and mouse genome and the same tumor oncogenes and tumor suppressor genes contribute to cancer in humans and dogs. Spontaneous cancers in companion animals (dogs and cats) therefore offer unique models for human cancer biology and translational cancer therapeutics.

Research studies in companion animals with cancer offer unique opportunities to patients and their owners, and, in addition, may lead to advances in human cancer research. Clinical trials may involve investigation of new imaging modalities or agents for detection of cancer, or long-term studies evaluating cancer risk or prevention. However, clinical trials are most often designed to assess efficacy of new therapies through several phases.

Phase I studies are safety studies, usually including small numbers of patients with different kinds of cancer, who may be heavily pre-treated (i.e. have exhausted conventional therapies). The aim is to identify the maximal tolerated dose and identify expected toxicities.

Pharmacokinetics/pharmacodynamics of new drugs may also be determined in phase I clinical trials. For targeted agents, the effect of the drug on the molecular target is often also examined in these trials. The first patients receive a low dose of the drug and then the dose is increased in set increments. Thus, the earliest patients to enroll may receive a sub-therapeutic dose, though newer trial designs aim to minimize this. The aim of a phase II study is to determine the true efficacy of the agent once a dose has been established. Larger numbers of patients, usually with one cancer type, are enrolled. Phase III trials compare the investigational agent either to standard of care or to placebo. Large numbers of patients are required for these trials to find statistically significant differences. Ideally, these studies should be randomized, blinded, and stratified where appropriate for prognostic factors to minimize bias in the results.

UTCVM has several oncology clinical trials enrolling at present. Eligible tumor types include canine and feline lymphoma, feline oral squamous cell carcinoma, canine mast cell tumor, canine histiocytic sarcoma, canine transitional cell carcinoma and canine osteosarcoma. Clinical trials at UTCVM are constantly being updated – please check the website:

<http://www.vet.utk.edu/studies/index.php> or contact the UTCVM oncology group for the most up-to-date information. Phone: 865-974-8387; Fax: 865-974-5213.