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Dogs Help People Find Cures for Cancer

By Jen Reeder

Few dog owners will dispute that dogs are, in fact, "man's best friend." For most, they're even family. And now they're an important key to helping find cures for cancer in humans, as comparative oncology seeks to find treatments for cancer in humans through research with dogs diagnosed with cancer.

"There's a variety of reasons why we know dogs to be a good model to study human cancer," says Melissa Paoloni, DVM, DACVIM (oncology) and director of the Comparative Oncology Trials Consortium at the National Cancer Institute. "First and foremost, they naturally develop cancer, and they develop all the same kinds of cancer that human patients do."



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Another advantage to research with dogs is that, due to their shorter life spans, they have what scientists call a "compressed progression time" for disease—i.e., cancer progresses faster in a dog than in a human—so studies take much less time. For example, if researchers wanted to test a new drug therapy for children with osteosarcoma, a bone cancer, it would take 5–10 years to evaluate it in a child, but only 12–18 months in a dog.

Though the concept of comparing cancer research to benefit dogs and humans had been around for at least 30 years, it really took off in 2004, after the National Human Genome Research Institute and Massachusetts Institute of Technology's Broad Institute mapped the genome (hereditary information, such as DNA) of a dog. This paved the way for true advancements in the field of comparative oncology, as scientists could now study cancer and other diseases in dogs with the same sophisticated methods and technologies as human cancers.

This also laid the framework for a pilot study Paoloni's team conducted last year with 31 dogs with different types of cancer to establish whether pet dogs with cancer can help evaluate personalized medicine approaches for human patients. This began with a feasibility study in which they were hoping to be able to analyze the genetics of each dog's cancer and generate a personalized medicine report—a treatment plan specific to each dog's illness—within 7 days, a turnaround time needed to fit clinical decision making. They succeeded in just 5 days.

"We did better than our expectations," Paoloni says. "It does enable us to move on and use the dog in sort of a large-scale model for a variety of personalized medicine trials that we are currently designing."

Three clinical trials are set for 2013 that will test dogs with osteosarcoma, angiosarcoma (a blood-vessel cancer) and

For More Information:

Searchable clinical trials database for cancer in pet animals:
vetcancertrials.org

melanoma (skin cancer). These trials will evaluate new pathways and targeted treatments in these diseases. If researchers are able to stop metastasis in the dogs' cancer and identify new populations that will benefit from these therapies, it could have profound implications for treating similar human cancers.

Paoloni says she's encouraged by findings so far, as well as the increased collaboration between veterinary and human cancer professionals.

"Of course we have a lot of work to be done, but what I think is really exciting is how far we've come," she says.

Gary Nice, president of the National Canine Cancer Foundation, which gives grants for canine cancer research, says while comparative oncology helps humans, it has the added benefit of increasing funding for research that will help dogs themselves. Nice, a TV and radio executive who founded the nonprofit in 2006 after losing his golden retriever, Bailey, to cancer, says his group funds a variety of research, including testing new pharmaceutical and naturopathic therapies. He believes cures for cancer exist, and researchers just need the funding to find them.

"You help find cures for cancer in dogs and it's going to help us," Nice says. "That's how we're going to find the answer: working together."

Rod Page, DVM and director of the Colorado State University Animal Cancer Center, agrees that funding is a limitation, as well as clinical trial enrollment.

"I think the biggest hurdle is knowledge: The fact that these clinical trials are available hasn't really been communicated well enough to the pet owner," Page says.

People whose dogs have cancer might want to consider enrolling their dogs in clinical trials, not only to advance science and help other pets and humans, but also to take advantage of a free treatment they might not have been able to afford otherwise. And, often, these new treatments could potentially be lifesaving.

"[In] the design of all of these clinical trials [it] really has to be emphasized that the intention is to try to do better than what is available currently," Page says.

Page will be the principal investigator for a groundbreaking study funded by the Morris Animal Foundation called The Canine Lifetime Health Project, which will focus on prevention and early detection of canine cancer by studying golden retrievers throughout their lives. Enrollment is currently open to dogs under 2 years old.

"It's a huge investment—it's a 15-year study of 3,000 dogs," Page says.

Page suggests that pet owners whose dogs are diagnosed with cancer ask their veterinarians about clinical trials available in their area. He says it's possible that some cancers will be cured in our lifetimes.

"Cancer in dogs, as in people, is becoming a chronic disease. In many cases, not a really acute lethal problem, [but rather] it's becoming more a management issue about handling a chronic illness," he says. "That's really a major advance."

The Canine Lifetime Health Project:
caninelifetimehealth.org
National Canine Cancer Foundation:
wearethecure.org
CSU Animal Cancer Center:
csuanimalcancercenter.org
Veterinary Cancer Society:
vetcancersociety.org



HealthyPet.com



Hospital Locator

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