

## A Win-Win: Studying Non-Hodgkin Lymphoma in Pet Dogs

Animal studies can be useful in the development of new medicines and treatments for cancer. In the case of non-Hodgkin lymphoma, studies using pet dogs have been used to study the cancer and create new medicines that are beneficial to both dogs and humans.

The article, *Man's best friend: what can pet dogs teach us about non-Hodgkin lymphoma?*, describes recent studies that use dogs with naturally occurring cancer. Currently mouse lymphoma models are the primary source of study, however, these models do not accurately represent human cancer. Cancer studies performed on mice use xenografts of human tumors placed into immunocompromised mice. Dogs, on the other hand, get spontaneously arising lymphoma, which resembles that of human lymphoma. There are some breeds of dogs that are more susceptible to lymphoma and studying them will help advance the understanding and treatment of lymphoma in these dogs as well as humans.

Pet dogs live in the same environment as we do, unlike mice that are handled and studied in labs. This allows for similar environmental risks factors to be studied, which will lead to benefits in cancer research. Dogs also have an accelerated life span so the lymphoma will arise and occur in a shorter time frame so these studies can be completed more quickly. Purebred dogs have less

genetic variations than humans do making it easier to find the areas where the canine chromosome has the cancer.

The most common lymphoma in humans is diffuse large B-cell lymphoma. The same lymphoma is also the most common overall cancer in dogs. In 2013 the first study to compare canine and human B-cell lymphoma found that dogs get the same cancer as humans and it happens at the same rate. The study confirms that studying spontaneously occurring cancer in dogs is similar to studying it as it occurs in humans.

For dogs the same precautions are taken when doing clinical trials as with humans. The goal is to minimize harm and learn as much as they can. Dogs are treated with the same type of chemo drugs as humans. However, dogs are given lower doses of the chemo to prolong their life while giving them a better quality of life. In humans the main goal is to eradicate the cancer and hopefully find a cure.

Dogs will still continue to get this cancer whether or not we study it. If we do chose to continue to study on dogs what we find will not only benefit the canines themselves, it will also be immensely useful to humans. This is definitely a win-win situation. These studies have produced the knowledge to create more efficient drugs and therapies that will help both human and canine cancer patients. Both groups will be rewarded with better treatments. Studying on dogs will overall be more favorable to both parties involved.

Chemo drugs that are used on dogs to treat their non-Hodgkin lymphoma are similar to the medication that my dad took when he was diagnosed with diffuse large B-cell lymphoma in 2015. This was a very scary time. When my parents told my sister and I we didn't know what to think. He started treatment and after six rounds of chemo he was cancer free. Knowing that dogs had a role in saving my dad is astonishing to me. It gives me hope that we can save our pets and the people we love all at once.

## Works Cited

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