

Man's best friend and 'healer'

Dogs are commonly called man's best friend. They may soon become man's best healer as well. Scientists say dogs are among the best animals when it comes to models for better medical treatments in humans.

US veterinary scientists are looking into ways that dogs can provide a variety of medical benefits to people, ranging from bone cancer studies to more effective treatment for spinal cord and other injuries.

"Dogs can be ideal models to study," says Dr Theresa Fossum, director of the Texas A&M College of Veterinary Medicine and Biomedical Sciences Institute for Preclinical Studies.

"This is especially true when it comes to certain types of cancer.

"Cancers in dogs, such as bone cancer, lymphoma and many other types of tumours, are almost identical to those same kinds found in humans," Fossum says.

"They tend to develop faster and run their course quicker, so it's an ideal way to see if a certain therapy will work.

"Dogs also tend to be better predictors of how new cancer drugs and medical devices can work. By studying cancer treatments in dogs, we can come up with better and more improved ways to treat cancer in humans and animals."

Bone cancer in dogs, Fossum says, is almost identical to human bone cancer.

To get a big picture of just how the disease forms and progresses in dogs, Fossum has helped to create the Texas Veterinary Cancer Registry, a database of treatment information.

"We want to get the word out to dog owners that this service is available, and it can help their pet and quite possibly, their next door neighbour one day," she says.

In the US, it costs \$3bn and up for a drug to be created and tested in many trials before it is offered to the public, she says.

"With more information, we believe it's possible to cut those drug development costs way down."

Fossum says the information can be useful in canine treatments.

Cancer is no stranger to dogs - in fact, about one in every four dogs will eventually get it. Breeds such as boxers and

golden retrievers are especially prone to bone cancer.

"Larger dogs are more likely to develop certain cancers, but any dog - or cat - can suffer from the disease," she says.

Treatments, as in humans, can be very expensive, "but it's possible some cases can be paid for if they are eligible for study in a clinical trial", Fossum says.

"Also, by getting more information on dogs who suffer from cancer, we can learn better ways to fight the disease and hopefully one day the costs will go down dramatically."

She intends to develop a similar programme to find treatments for other diseases that dogs and humans share, such as diabetes, and heart and kidney disease.

Dr Jonathan Levine, an assistant professor in the Small Animal Clinic who specialises in spinal cord injuries, agrees that dogs with naturally occurring diseases may offer promise in advancing human therapies. He has received a \$900000 US Department of Defence grant to develop non-invasive treatments and therapies for spinal cord injuries in dogs.

"We hope the results will translate into successful therapies and treatments for humans - that's our goal," Levine says.

"Since most of these injuries happen naturally, they are more diverse. The affected dogs are out in the environment; they're not all the same breed, and the injuries don't happen the same way.

"So the diversity probably gives a little advantage to exploring theories into the possible treatment of dogs and humans with similar spinal cord injuries."

The US Defence Department is particularly interested in this type of research because of the possible implications it may have for troops with spinal cord injuries, he says. Such injuries in humans can be physically debilitating, and expensive.

Studies show that a person who has sustained a spinal cord injury at age 25 in the US, for example, may face medical expenses of \$729000 to \$3,2m over a lifetime.

Levine says clinical trials will be performed on young dogs who suffer from a severe disk problem called canine thoracolumbar intervertebral disk herniation. It's a disease similar to spinal cord injuries in humans.

Dachshunds suffer from the disease most often, and this breed will represent about half of the cases.

Other veterinarians, such as oncology specialist Dr Heather WilsonRobles, are conducting similar research with human-animal connections. Wilson-Robles' work involves lymphoma, melanoma, mammary and other types of cancer and canine tumours. It has been funded several times by the American Kennel Club and the US National Institutes for Health.

She agrees that in many cases, the cancers that occur in dogs are almost identical to those in humans, making dogs a good predictor.

In the case of melanoma in dogs, however, it is usually not caused by sunshine, but the behaviour of the cancer is similar in both humans and dogs.

"With mammary glands, women get breast cancer, dogs get mammary cancer and the two are alike.

"We know that not having children increases the risk in both species," she says.

She and Levine have created a website (vetmed.tamu.edu/clinicaltrials) detailing clinical trials they have conducted.

Levine says that the type of research involves "a lot of trial and error, many times over".

"It's like Thomas Edison and the thousands of attempts he made before he got the light bulb to work," he says.

"With dogs, spinal cord injuries are much like those in people - the damage is the same, the MRIs we do on both look pretty much the same, and on and on.

"In the last 10 to 15 years, there has been very limited success in treating these types of injuries," says Levine.

"But we think a major breakthrough is possible in the years to come, and again, our ultimate goal is to see if what we do is successful in dogs, it can also be successful in humans." Newswise

Dogs also tend to be better predictors of how new cancer drugs and medical devices can work. By studying cancer treatments in dogs, doctors can come up with better ways to treat cancer in both humans and animals.

Source: Business Day

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