Cornell University
College of Veterinary Medicine

Study confirms risk factor for congestive heart failure

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Vitamin D is at the core of strong bones and healthy teeth. Extensive evidence also suggests that vitamin D plays a role in cardiovascular health for people. The results of the first research ever conducted to investigate the association between vitamin D status and congestive heart failure in dogs now confirms that the same holds true for our canine companions: vitamin D deficiency may be a risk factor for Congestive Heart Failure in canines.

Recently published in the Journal of Veterinary Internal Medicine, the study analyzed 31 dogs with confirmed congestive heart disease and 51 unaffected control dogs. The Cornell research team discovered that while age, sex, and body condition were not statistically significant factors, the level of 25(OH)D, a measure of vitamin D in the blood stream, positively correlated with heart health. The study participants were all patients of the Cornell University Hospital for Animals and were visiting the hospital for medical care that required the collection of a blood sample. Dogs were enrolled with client consent.

This sample was analyzed for 25(OH)D, using a commercially available testing kit, and owners were asked to complete a questionnaire detailing dietary intake during the three months immediately preceding enrollment. With this anecdotal nutritional information, the amount of vitamin D ingested was estimated (because foods fed to dogs in this study were not subjected to quantitative analysis, the actual vitamin D content could not be determined) and compared to body weight to compensate for size and body condition.

As participants of this study, the DNA from these dogs is now part of the College's BioBank, a repository of DNA and medical information that supports scientists conducting research on genetic diseases. Investigators relate the genetic information present in the DNA to the medical information to identify the underlying contributing, protective, or causative genes. Researchers use the information to develop better diagnosis methods, such as genetic tests, treatments and new drugs. The bank holds more than 12,000 samples from a variety of species that have presented with inherited conditions in areas such as behavior, cardiology, dermatology, oncology, ophthalmology, and reproduction.

The results of this study will form the basis for future investigations that explore the efficacy of supplementing with vitamin D with dogs in congestive heart failure.

"The outcomes of studies on the benefits of supplementing with vitamin D in people have been inconclusive, but there is evidence that the level of vitamin D deficiency may play a role," said Dr. Marc Kraus, who conducted the research

with Drs. Kenneth Rassnick, Joseph Wakshlag, and Anna Gelzer. “The question of supplementation is even more relevant to dogs because we know that, unlike us, they are not capable of absorbing vitamin D through their skin. Perhaps, supplementing with vitamin D (in dogs with congestive heart failure) in addition to conventional therapy may increase survival time in this population of patients. This should be determined with future studies.”

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