



Ryan Hospital

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Canine Dilated Cardiomyopathy

How does the heart work?

The heart is responsible for maintaining the circulation of blood around the body. This organ is divided into four chambers, comprised of the right and left atria (upper collecting chambers) and ventricles (lower pumping chambers). The right side pumps deoxygenated blood, returning from the body via the veins, to the lungs. From the lungs, oxygenated blood enters the left side of the heart where it is pumped out to the tissues of the body through the arteries.

What is Dilated Cardiomyopathy?

Dilated cardiomyopathy (DCM) is a disease of the heart muscle which causes the heart to weaken and enlarge. DCM usually affects both the left and right sides of the heart. Typically, both the ventricles and the atria are enlarged and often the muscular walls of the heart are much thinner than normal. However, in some breeds the disease mainly affects the left side of the heart, while in others the right side is more severely affected. As a result, the ventricle's ability to pump blood out to the body and lungs becomes impaired. When the ventricles fail to pump effectively, the blood backs up in the veins. If the left side of the heart fails, this causes fluid to collect in the lungs causing coughing and/or difficulty breathing. If the right heart fails, fluid collects in the abdomen and/ or chest, leading to abdominal distension (ascites) and/ or fluid in the space surrounding the lungs (pleural effusion).

Who is commonly affected by DCM?

The disease usually afflicts large breed dogs such as the Doberman pinscher, Boxer, Newfoundland, Great Dane, Golden retriever, Labrador retriever, and the Irish wolfhound. DCM can also affect English and American cocker spaniels, and rarely, other small breed dogs. In American cocker spaniels, the disease may be

related to a deficiency in taurine and/ or L-carnitine (amino acids usually obtained from protein in the diet).

The occurrence of DCM increases with age and typically has an age of onset between 4 and 10 years. However, DCM may occur in young Portuguese water dogs as an inherited disease.

What is the long term prognosis for DCM?

Long term prognosis for DCM varies considerably. Unfortunately, most dogs with signs of congestive heart failure at the time of diagnosis die as a result of the disease within 6 months. In the most severe cases, some dogs may survive only weeks to a few months. Occasionally, dogs may do well clinically for 1-2 years.

What are the goals of treatment?

Treatment of DCM is aimed at both improving the heart's function and controlling the signs of congestive heart failure.

Drugs such as pimobendan are used to help the heart contract more strongly. Diuretics such as lasix are used to help control and prevent accumulation of fluid in or around the lungs. ACE inhibitors, such as enalapril, are prescribed to open up the arteries, which makes it easier for the heart to pump blood forwards; pimobendan also has this effect. Diuretics and ACE inhibitors can occasionally affect the kidneys; this is monitored by regular kidney evaluation with blood chemistry analysis.

Additional drugs may be prescribed to control cardiac arrhythmias (electrical disturbances in the heart) or to address any other specific needs your pet may have.

What should I monitor at home?

It is important that you monitor your dog's overall attitude and any change in appearance. It is helpful to keep a record of your pet's breathing rate so that you will notice increases or changes from normal breathing. When your dog is at rest or sleeping, watch their sides rise and fall as they breathe normally. One rise and fall cycle is equal to one breath. Count the number of breaths they take in 15 seconds, and then multiply this number by 4 to get total breaths per minute. For example, if you count 8 breaths in 15 seconds, that is equal to 32 (8 x 4) breaths per minute. A normal dog at rest should have a respiratory rate less than 40.

If you notice any of the following, please call us immediately:

- heavy or labored breathing
- resting respiratory rate greater than 40 or consistently increasing respiratory rate
- coughing
- fainting spells
- severe exercise intolerance
- restlessness
- lethargy

Thank you for visiting the cardiology service at the Ryan Veterinary Hospital. If you have any further questions, please do not hesitate to contact us.