



Pulmonary Hypertension

What is Pulmonary Hypertension?

Pulmonary hypertension (PHT) means high blood pressure in the blood vessels entering and leaving the lungs. In severe cases this can lead to disease and failure of the right side of the heart.

Most often in animals, pulmonary hypertension is a sign resulting from an underlying disease, so strictly speaking PHT is a secondary condition and not a primary disease (primary pulmonary hypertension is uncommon in animals). Those other diseases can include conditions within the lung, such as pulmonary fibrosis; diseases affecting the left side of the heart, such as degenerative mitral valve disease or dilated cardiomyopathy; or pulmonary thromboembolism and heart worm disease, both of which block the arteries in the lung. As mentioned above, primary or idiopathic pulmonary hypertension (idiopathic meaning the cause is unknown) is uncommon in small animals.

PHT is seen far more commonly in dogs than in cats.

What signs are displayed in dogs with PHT?

The clinical signs of PHT depend on the severity of blood pressure elevation in the lung vessels. However clinical signs may include shortness of breath, weakness, exercise intolerance, coughing and even fainting. In severe cases the animal may collapse from the effort of trying to walk across a room. Sometimes pets with moderate to severe PHT have significant breathing difficulty and blue-tinged gums from the lack of oxygen. Some can develop signs of right-sided heart disease and right-sided heart failure (e.g. abdominal enlargement due to fluid accumulation). Not all these signs are always secondary to pulmonary hypertension, rather they may be directly the result of the underlying disease causing the PHT. Sudden death is also a sign of severe PHT.

Severe cases are debilitating, and if the animal was a person, he or she would be considered disabled.

How is PHT diagnosed?

The diagnostic test of choice is echocardiography (cardiac ultrasound). It provides a non-invasive and readily available method of diagnosis but should be performed by a



person experienced in echocardiography (a specialist veterinary cardiologist is best). It does not normally require your pet to be anaesthetised or sedated.

How is PHT treated?

PHT can be difficult and frustrating to treat. The veterinarian will attempt to identify the underlying cause and treat this accordingly (which may in turn improve or eliminate the pulmonary hypertension). Medications are available that can be used to treat pulmonary hypertension specifically, which generally improve quality of life (it must however be emphasised such medications are palliative and do not address the underlying cause of PHT).

When PHT is severe and sudden (these cases are called acute), treatment focuses on administering oxygen, significant exercise restriction, alleviating congestive heart failure and any underlying diseases. At-home oxygen cages can be used to help provide relief for dogs with severe PHT. Longer-term management generally relies on the medication sildenafil (Viagra – yes, the Viagra you’ve heard about, but it also works well to relieve signs of PHT as it was originally developed to treat PHT in humans). Additionally, your veterinarian might prescribe pimobendan, a heart medication. Newer human drugs that decrease pulmonary pressure (e.g. bosentan) are cost-prohibitive for veterinary patients.

What is the prognosis of PHT?

Prognosis for a dog with pulmonary hypertension depends on the underlying disease causing the pulmonary hypertension and hence is highly variable. Pulmonary hypertension is a truly debilitating disease in many cases, but on occasion it is cured (if the underlying disease is addressed) or at least well-managed on medication. However, many patients die suddenly because of PHT or have a quality of life that the owners consider intolerable.