

Congestive Heart Failure in Dogs, Right-Sided

Rebecca E. Gompf, DVM, MS, DACVIM (Cardiology)

BASIC INFORMATION

Description

Right heart failure occurs when the right side of the heart is no longer working properly and cannot pump blood effectively to the lungs and left heart. Fluid accumulates in the abdomen and the chest. Eventually, if right heart failure is not treated, breathing is affected and death may occur.

Causes

A number of diseases can cause right heart failure in dogs (see also the handouts on each of these conditions):

- Atrioventricular valve degeneration of the right (tricuspid) valve
- Dilated cardiomyopathy, mainly in large- and giant-breed dogs
- Chronic heartworm disease
- Some congenital heart defects, such as tricuspid dysplasia, ventricular septal defect, and atrial septal defect

A disease that can mimic right heart failure is pericardial effusion. If a large amount of fluid builds up in the pericardial sac around the heart, the right heart does not fill properly, and fluid may accumulate in the abdomen.

Clinical Signs

Dogs with right heart failure cannot exercise. They develop abdominal distention and loss of muscle mass, which can be so severe that the back bones and ribs become prominent. When the abdomen is full of fluid, the dog may not be comfortable lying down and may breathe faster (more than 50 times per minute), with increased effort.

Diagnostic Tests

Dogs in severe distress often require stabilization before many tests can be performed to evaluate the heart and other organs that depend on normal heart function. Tests may include the following:

- Chest and abdominal x-rays
- Echocardiogram (heart ultrasound)
- Electrocardiogram (ECG), especially if an irregular rhythm is detected
- Laboratory tests, including a heartworm test

TREATMENT AND FOLLOW-UP

Treatment Options

If there is a significant amount of fluid in the chest, it is usually removed so that the dog can breathe easier. Fluid may also be removed from the abdomen and from the pericardial sac to make the dog more comfortable.

Dogs with moderate to severe right heart failure may be hospitalized for stabilization with injectable diuretics (such as

furosemide) and oxygen therapy. Once the dog is stable, oral medications are started. Which medications are chosen depends on the disease causing the right heart failure. Choices include the following:

- Furosemide (*Lasix*) diuretic is usually continued indefinitely and may be combined with other diuretics, such as spironolactone (especially to keep fluid levels low). Dosages are adjusted to the lowest ones that keep the dog out of heart failure.
- Angiotensin-converting enzyme (ACE) inhibitors, such as enalapril, benazepril, or ramipril, may be used to improve the quality of your dog's life and help reduce fluid retention by the body. Their effects are not immediate, but they exert modest positive effects over weeks to months.
- Pimobendan is a newer drug that acts as a vasodilator to relieve the workload of the heart and to increase the force of contractions of the heart. Pimobendan is commonly used with other medications, such as diuretics and ACE inhibitors.
- Digoxin is used in some dogs that have moderate to severe heart failure and very fast heart rates secondary to abnormal rhythms, such as atrial fibrillation.
- Beta-blockers, such as carvedilol, are being investigated to determine whether they can improve the quality of life in dogs with heart disease. Beta-blockers are also used to slow the heart rate secondary to atrial fibrillation.
- Occasionally, other classes of drugs, such as calcium channel blockers, may be needed to control high heart rates caused by atrial fibrillation.

In addition to drug therapy, dogs with heart failure should not be fed salty foods, and low-salt diets may be used to limit salt intake. Although strenuous exercise should be avoided, mild exercise may be done based on guidelines from our veterinarians. If heartworm disease is present, it will be treated once the right heart failure is stable.

Follow-up Care

Intensive monitoring is often needed during hospitalization. Follow-up visits are usually scheduled within 7-14 days after discharge. Recheck visits may include chest x-rays, laboratory tests, and ECGs. The interval between visits and further testing depends on the underlying disease and how your dog responds to medications. Periodic monitoring is needed for the life of your dog. Notify our veterinarians if any signs of heart failure return while the dog is on therapy.

Prognosis

Most dogs with right heart failure have an average life span of 6-12 months; however, survival time is dependent on the underlying cause.