



HEARTWORM IN DOGS

What are Heartworms?

This is a disease caused by infection of a parasitic worm *Dirofilaria immitis* that is transmitted by mosquitoes. The severity of the disease is directly related to the number of worms, duration of infection, and host response. The worms cause damage to the heart with resulting lung hypertension, and blood clots. Pulmonary (lung) damage is increases after the death of adult worms.

The body systems affected include: Cardio-vascular, because of right side heart enlargement and, in some animals, congestive heart failure; Kidneys, because of immune complex caused inflammation; Lungs, because of clots, allergic pneumonitis, and chronic inflammation.

How Common are Heartworms?

The incidence or prevalence is highly variable according to climate, with virtually 100% unprotected dogs living in highly endemic regions becoming infected. It is most common in tropical and semi-tropical zones (along the Atlantic and Gulf coasts and Ohio and Mississippi River basins). For years it has gradually extended across the United States, with prevalence on the rise in parts of southern Canada as well.

What are the Symptoms of Heartworm Disease?

Infection can occur at any age, but most affected animals are 3-8 years old. Early on, dogs often show no signs or exhibit minimal signs such as coughing and exercise intolerance. As the disease progresses the dog will show wasting, fainting, and ascites (enlarged abdomen with fluid retention). Some dogs will show bleeding from the nostrils indicating severe lung complications.

How is Heartworm Disease Diagnosed?

The history of an outdoor dog without the benefit of heartworm preventative medicine and showing the symptoms of lung congestion and right heart enlargement are suggestive. Blood tests will confirm the diagnosis. Chest X-rays are very useful in determining the degree of heart enlargement and lung involvement. Other tests for liver and kidney function may show abnormalities too.

How is It Treated?

Most patients are hospitalized during adulticide administration. This is an intravenous solution that kills the adult worms. Hospitalization is recommended for dogs experiencing blood clot complications, as well. The treatment involves the use of arsenic compounds to kill the adult worms (adulticide) followed by drugs to kill the larvae (microfilaria).

The treatment is potentially dangerous, and should only be done under direct veterinary supervision. Severely affected dogs will require medicines to stabilize the heart and lungs before the adulticide may be given. Adulticide treatment is not indicated in patients with kidney failure or liver failure.

Severe restriction of activity is required for 4 to 6 weeks after adulticide administration. Cage confinement is recommended for 1 to 3 weeks after adulticide administration in severe cases. Cage confinement for 3 to 7 days is recommended for dogs experiencing lung complications. In some dogs surgery is advised. It is the treatment of choice for dogs with certain abnormalities (vena cava syndrome). If the heart is enlarged, restricted sodium diet recommended (Prescription Diet Canine H/d).

Is My Dog Going to Live If It Has Heartworms?

There is a good prognosis for animals with mild to moderate infection. However, postadulticide lung complications are likely in animals with moderate to severe infection levels. Standard adulticide therapy in dogs with severe infection is associated with high mortality due to subsequent blood clots (and dead worms) in the lungs. So, the prognosis depends on the number of heartworms present and the degree of lung inflammation resulting.

Remember, reinfection can occur unless appropriate preventative is administered ("Heartgard" once a month chewables).

Follow-Up Care

Microfilaria concentration tests are performed to be sure the larvae are eradicated. Heartworm preventative can then be instituted. An antigen test is indicated 12 weeks after adulticide treatment to be sure the adults were all killed. Prevention is BEST!

Heartworm preventative should be provided for all dogs at risk. Heartgard Plus® is a highly effective, once a month preventative that also controls hookworm and roundworm infections. *Prevention is a whole lot safer and cheaper than treatment of the disease!*

Thank you for this opportunity to serve you!