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## Heartworm Treatment Aftercare

Caveat: The following are guidelines for our Foster Homes caring for our heartworm patients and not intended as medical assistance, as we are not veterinarians but are rescuers following our clinics' guidelines combined with our experience after years of caring for heartworm patients. Though we are happy to share what we have learned with other rescue groups (feel free to link to this page if you'd like to) and with owners who are taking their dogs through the treatment, this article is not a substitute for consultation with veterinarians, closely following their treatment protocol.

It is important for people taking care of heartworm patients to understand that heartworm disease is not a vague microscopic infection as some owners who don't give the pills mistakenly believe, but is a severe infestation of the heart by worms of from 6-12" in length which load the heart and cut off its ability to function. In severe cases, the worms grow, reproduce, and migrate from the heart to arteries, the lungs, and even other organs in the body. It is a horrific disease that no dog should have to endure and is completely preventable by heartworm pills, which kill the microfilaria deposited in the blood stream by mosquitoes before they can invade the heart, mature, consume the heart, and kill the dog. Yet because of the ignorance or indifference of some dog owners, rescue groups across the nation receive far too many dogs who are heartworm positive. Fortunately, there is a cure, though it is rough on the dogs and their caretakers, but most dogs with heartworm disease do survive through the treatment and the loving, knowledgeable care of their concerned caretakers.

From the occult blood test, if a heartworm positive (HW+) dog is a Stage 1 or 2 (mild to moderate heartworm disease, though the assessment is more complicated than this) with no clinical symptoms (slow heartbeat, congested lungs, fever, prior coughing, and listlessness), we do the full treatment of two injections over 24 hours while the dog stays in the clinic over night. A second, milder injection may be done in 4 weeks with re-check or Ivermectin pill for microfilaria showing up. If the dog is a Stage 3 - 5 (severe to critical heartworm disease--"loaded" with the heartworms), or has clinical symptoms (is symptomatic), we split the treatment over four weeks -- a 'split treatment' that is much easier on the dog who is extremely ill with the disease. The dog gets one injection; then the standard two injections over 24 hours in 4 weeks; recheck and possible Ivermectin in another week. The injections (called an Immiticide or Adulticide because it kills adult heartworms) are made in the lumbar region with a long needle; the Immiticide is an arsenic-based compound (though the modern compound has less arsenic than older compounds): it can hurt some dogs, cause pain to spread throughout the lower back muscles, and make the dog feel nauseated. Both symptoms will usually ease in a couple of days.

In Houston, because of our climate, waterways, and resultant heavy mosquito infestation--along with the ignorance and carelessness of far too many owners--one-third of our rescues are HW+. However, most of our HW+ dogs, close to 95%, get through the heartworm treatment without complications, but the following are signs to watch for and aftercare to observe during heartworm treatment.

Some patients are very tired and sleep a lot for two to four days; some have temporary difficulty getting up because of the muscle soreness. Though some dogs do not experience the muscle soreness, it is particularly important not to pick up the dog or put any pressure on the back for 2-4 days after the injections. Even a gentle dog might cry out and snap in pain if that area is touched. You will know the dog is feeling better when the eyes brighten, tail wags, and the dog resumes interest in the caretaker and home activities, usually in just a few days. Let the dog sleep in a crate or on a preferred doggy bed or blanket, wherever she is most comfortable, while you watch her and keep her quiet; some dogs think they're feeling well and may even want to play, but it is imperative that no heartworm patient exercise during the recovery period. The dog may not run, play, or go for walks during the four-week period. Even after heartworm treatment is successfully completed, the patient should not go for long walks or engage in strenuous play for another month: each patient should be allowed to gradually build his or her strength. Go out in the yard with him to make sure he doesn't run but just eliminates and comes back in. If he wants to run or chase squirrels in the yard, then take him out on a leash.

The most important observations are the following:

1. Keep an eye on the gums; they should be pink. If they get very red or white, along with listlessness, call us and take the dog to the vet: the dog may have a secondary infection (red gums) or anemia/shock (white gums) and need quick intervention.
2. Pay close attention to combination of lethargy, increased respiration, restlessness, and coughing; if you note these symptoms after treatment, call us and take the dog to the clinic. She will probably be put on Prednisone and will respond quickly.
3. Watch for vomiting or any bloody discharge combined with listlessness, fever, rapid breathing/heart rate, and pale gums. Although extremely rare, also watch for hindquarter paralysis and urinary incontinence. With the symptoms in (3), which are life-threatening, the dog goes immediately to the nearest HSS Clinic because the signs point to embolism (worm clot from the die-off of the parasites during treatment); the doctors will keep her overnight, possibly a couple of days or even a week, put her on IV to hydrate her, sometimes oxygen if she's in distress, and give her cortisone injections to break up the clot. We will assist with all decisions for treatments in the clinics and cover the medical expenses.

The above warning signs are the most serious to watch for and are rare in our experience. Most HW+ dogs do go through a certain amount of coughing and/or gagging reflex which could start at any time, but some patients rarely cough at all. The worms are dying and dissolving, being passed through the bloodstream and lungs; the dog has to cough up the resultant phlegm – not the same as real vomiting which you'd recognize. If coughing starts, call us and the clinic; they will want to listen to his heart and lungs and may want to put the dog on cortisone. The coughing/gagging is alarming for the caretaker; even more so for the dog: pet him if he wants it; talk to him to let him know he's loved and secure.

However, if the coughing/gagging reflex seems heavy and uncontrollable, causing the dog distress, call the vet and us as he may be starting an embolism. Again, this is rare in our experience, and we do expect some coughing/gagging a few times a day or a few times a week for a couple of weeks; then it gradually subsides as he improves. Give the dog  $\frac{1}{2}$  coated or baby aspirin twice a day the first couple of weeks; this helps thin the blood so he can pass the dissolving worms. However, if the veterinarian has prescribed Prednisone for your foster because he hears a 'crackling' in the heart indicative of higher level infestation or fluid build-up, do not give the aspirin with it. Use low fat cream cheese, cottage cheese, or hotdog to ease the aspirin or Pred. down. If the dog loses his appetite, mix a little Mighty Dog canned food or Veg-All (mixed vegetables) or turkey/chicken broth in with his kibble until he regains appetite, usually in a couple of days; be sure he's drinking water every day. Crate him during the day when you're gone, keep him quiet and loved when he's out of the crate: no play or walks for four weeks. Crate the first couple of weeks, though we find often weeks 2 and 3 can be the most 'gaggy.' If so, continue to crate him another week.

Even after treatment and health clearance, in rare cases some former heartworm patients can still test positive for the heartworm antigen for four to six months after treatment, which is why the dog should be re-tested in four months and again six months later while being kept on the monthly preventative. This does not necessarily mean the dog still has heartworms and must go through the treatment again but that it is taking longer for the antigens to leave his system; however, in rare cases, the treatment may not have killed all the worms, and the doctors must make a case-by-case decision about re-treating the dog. Thus we want to monitor every heartworm patient a full year after the treatment and then yearly after that as for all dogs. Also, in rare cases, a dog that initially tested HW- when brought into our program may actually have heartworms because the antigens don't show up in the test for 4-6 months. We re-test our dogs, but this is another reason we want our adoptive homes also to re-test. HW+ dogs almost always have some enlargement of the heart, and some damage that can be seen on x-rays (vets can tell from x-rays when a dog has had heartworm disease) that may still need some healing time for a few more weeks, but the dogs will be cured and live normal lives from that point on. We have former heartworm patients going strong six years after treatment.

We recommend you read more about heartworm disease and treatment. Go to the American Heartworm Society's web site at <http://www.heartwormsociety.org/heart.htm> and the Pet Center's discussion of the disease at <http://www.thepetcenter.com/gen/hw.html>; also see our own heartworm disease treatment for more links.

Foster homes please call or e-mail any time you have questions or concerns, and we'll walk/talk you through. Thanks so much for being willing to help us help our dogs.