

I had the opportunity this month to attend the daylong session known as Heartworm University presented by the American Heartworm Society. The breaking news is that the drug is used for treatment of heartworm disease, Immiticide, has gone off the market and will not be available for an unknown period of time. This means that the emphasis on prevention and investigation of alternative methods of treating clinical cases has become a high priority.

As I'm sure you all know by now heartworm is transmitted by mosquitoes. The heartworm parasite undergoes a multiple stage development from larva to adult. Only one part of the heartworm's lifecycle is infectious to dogs and that is a stage called L3. Mosquitoes transfer L3 when they feed on a dog. L3 lives in the tissues of the dog for about 45 days before it progresses to the next stage and eventually moves into blood and migrates into the pulmonary arteries and heart. The time in which the preventative medications work is during the time that the worm is in this L3 stage. That's why the recommendation is to treat every 30 days – to catch it in this L3 stage.

It takes 6-9 months for the worm to develop from an L3 to an adult in the heart. This is important because the heartworm test detects only adult heartworms. This means that when a dog has missed one or more doses of preventive, there is a 6-9 month window where the dog may have a negative test and start preventive, but still be infected. The test will become positive some months later when the worms which had already grown up past the L3 stage where preventive works, finally reach the adult age where the test detects them. When that repeat heartworm test shows that the dog is positive, your first thought is likely to be that the preventive didn't work. That's not the case - it's due to the long slow lifecycle and the fact that the preventive only works during one early part of the lifecycle.

Another pearl of wisdom from the Heartworm University was a discussion of the reason why it is now recommended to treat your dog 12 months of the year without a break. Mosquitoes are capable of overwintering in barns, garages, basements and hidden corners of houses. In the heartworm carrying mosquito, metabolism of both the insect and its parasite slows to a low level until spring or until warm days arouse them. The maturation of heartworm within a mosquito proceeds at a rate which is temperature dependent, and is faster the warmer it is. At temperatures below 57, it becomes dormant. It resumes development when the temperature gets warmer. This means is if we have 4 or 5 warm days in January or February, during those few days the parasite is able to advance its lifecycle. If we have a couple of warm weeks early in the year during the time when you may not be treating for heartworm it's possible that the dog can become infected. The further north you live the less likely that this is to occur. It is a fairly good probability in areas like where I live around Philadelphia where we frequently have one or two warm weeks even in the midst of winter.

You may have heard talk about the "slow" or the "soft kill" of adult heartworm using the preventives. It has in fact been shown that ivermectin when administered continuously for 31 months has nearly 100% efficacy in young heartworm infections and this is the only preventive which has been proven to have have this high level of adulticidal efficacy. Many people also use doxycycline routinely in the management heartworm infection in dogs. This is not a proven therapy but appears to help with the eradication of microfilaria and it may decrease inflammation in the tissue as adult heart worms are killed. This slow kill method of treatment of heart disease has not been recommended for a long list of reasons up to now but until we have the adulticide back on the market this may be the only choice your veterinarian has to offer you, should you have the unhappy finding of a positive heartworm test. The bottom line is stay on your preventive - use it every month and you won't have to worry about learning any of this the hard way.