



COMBATING PARASITES:

The Critical Role of Veterinary Compliance in Protecting Pets

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Data clearly show that more cases of heartworm disease are diagnosed in dogs today than just 10 to 20 years ago.¹ When discussing the increase, several important factors often come up, such as transport of infected dogs, large populations of reservoir hosts, and the recognition of less susceptible (resistant) heartworms. While all of these are important topics that we must evaluate further, the biggest issue in heartworm disease prevention today is no different than it was 10 to 20 years ago. As a community, we have to improve compliance.

Before we talk about compliance, let's take a look at the heartworm disease landscape. Heartworm disease has become a risk today even in parts of the country that were historically low risk for the disease. In the last decade, dogs living in unfortunate conditions in heartworm endemic areas are commonly relocated for adoption. A heartworm-infected dog even might be transported across the country, and veterinarians from areas historically thought to be low risk for heartworms tell me that they're seeing more cases. Also, reports of increased populations of wildlife host species, such as coyotes, emphasize the evolving and ever-present risk of heartworm disease in many parts of the country.

A common topic that is brought up at veterinary meetings related to heartworms is resistance. In the past two decades, several less-susceptible isolates of *Dirofilaria immitis* have been identified in the US.^{2,3,4} These resistant heartworm isolates appear to be a focal issue seen in small parts of the country, such as the Mississippi Delta, and do not appear to be widespread. While resistance is infrequent and not a significant threat in much of the

US, many drug companies have considered resistance when developing some of the more recent heartworm disease preventives. One example is the use of moxidectin, which has shown to often have more beneficial properties against rare, less susceptible heartworms than some of the other macrocyclic lactones.^{5,6,7} But let's be clear, all heartworm preventives are still extremely effective in the vast majority of heartworm isolates across North America.

I give lectures to veterinarians around the country, and a question I've been hearing lately is around the optimal oral dose of moxidectin needed to be effective against heartworm disease. This question is often brought up in the context of resistance, where both increasing the moxidectin dose and increasing the number of monthly oral administrations has been shown to improve the effectiveness against less susceptible isolates. The scientific fact is that published data clearly documents that 1 oral dose of moxidectin at 3 mcg/kg is 100% effective against **susceptible** isolates,⁸ and both of the currently approved and marketed oral moxidectin-based heartworm disease preventives in the US have a minimum recommended dose that is much higher than 3 mcg/kg. Single oral doses of moxidectin as high as 100 mcg/kg are not 100% effective against at least one **resistant** isolate.⁷ What's been clearly shown in studies is that giving multiple oral doses of moxidectin greatly improves efficacy against these resistant heartworm isolates, regardless of the product being used.^{6,7} Therefore, year-round protection gives every pet the best protection.

So while rare, less susceptible isolates appear to be a problem in some parts of the United States, the more significant problem

throughout all of the country is that there are too many dogs that aren't receiving heartworm disease prevention (or enough heartworm disease prevention).

When I consider compliance, I think of two separate categories: client compliance and clinic compliance. Client compliance refers to the pet owner's ability to administer the prescribed medication consistently and on time. Clinic compliance, on the other hand, refers to the veterinary healthcare team's responsibility to ensure that clients leave the clinic with the necessary heartworm disease prevention medication.

Unfortunately, both client and clinic compliance rates are abysmal. Recent assessments show that approximately 68% of dogs seen by veterinarians in the US receive no heartworm disease prevention from that veterinary practice each year.^{9,10} Many veterinarians are hesitant to "sell" products, but we must shift our mindset. We are not "selling" products. We are prescribing medication to protect the health of an animal.

Many veterinary hospitals have seen remarkable results by implementing relatively simple steps to ensure that pet owners understand the importance of heartworm disease prevention. Ensuring that your entire veterinary healthcare team is speaking similarly about the importance of heartworm disease prevention is one action that can make a big difference. Some clinics have also seen success with their direct-to-home shipping services

by ensuring that clients receive their pet's medication regularly and on time. By signing clients up for these services, veterinarians can help ensure that pets receive consistent, year-round parasite protection.

I have always been an advocate of tailoring parasiticide administration to the particular lifestyle of the dog (or cat) and the local parasite prevalence (foundation parasites). Not every pet everywhere needs the same parasiticide. However, given the abysmal compliance rates we are experiencing, it might improve client compliance if veterinarians consider prescribing combination products that address multiple parasites. These all-in-one or close-to-all-in-one products make it easier to convey the importance of year-round, broad-spectrum parasite protection. Year-round parasite protection is crucial for several reasons. First, it eliminates the guesswork involved in determining when to start and stop seasonal treatments. Second, it addresses the overlapping ecological patterns of various parasites.

As a profession, veterinarians have a responsibility to protect the health and well-being of animals and their human families. One of the most significant challenges we face today is the increasing prevalence of heartworm disease and other parasitic infections. Veterinary healthcare teams must act with urgency to ensure that pet owners understand the importance of year-round, broad-spectrum parasite protection.

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US-PET-0832-2023

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