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All About Heartworm – Part 2

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A close-up look at prevention and treatment of heartworm, and why both conventional and alternative therapies play important roles.

If you have a dog, you already know something about heartworm. But there are several misunderstandings surrounding this disease that need clarification. In the second of this two-part article, we'll take a detailed look at treatment and prevention options, and why an integrative approach is the best defense.

PREVENTING HEARTWORM

If you live in a region where heartworm is prevalent, you need to be proactive about prevention. Start by taking steps to minimize your dog's risk of being bitten by mosquitoes.

Your dog may also need to receive a conventional heartworm preventive. Many people shy away from these medications, but it's important to realize that depending on where you live, they are an effective way to protect your dog, and are part of an integrative prevention approach. There are several choices – oral, topical, or injectable.



1. Oral monthly medications use medicine such as ivermectin or milbemycin. In general, these drugs are nearly 100% effective when given following label instructions, and are actually among the safest medications used in clinical practice. In general, most holistic veterinarians prefer oral medications for conventional heartworm prevention because they don't last as long in the body as topical and injectable medications (only 24 to 48 hours as opposed to months). While some people have expressed concerns about ivermectin, because certain breeds are more sensitive to these chemicals, the

sometimes fatal reactions found in some lines of collies and collie crosses involve much higher levels of this chemical than what is found in heartworm preventives.

2. Topical medicines are applied monthly to the dog's skin. After application, they enter the bloodstream through the skin; concentrations of the medicine in the blood and tissues prevent heartworm disease. Because they persist in the dog's body for several months, however, they aren't the first choice with most holistic veterinarians.
3. There is currently one injectable medication for heartworm prevention. It was recently returned to the market after being removed several years ago due to severe side effects in a number of dogs. There are still significant warnings and restrictions on the label, and veterinarians must be certified in order to administer this product. Because the medication lasts in the dog's body for at least six months, most holistic doctors don't prefer it.

USING ORAL PREVENTIVES PROPERLY

It's important that oral preventive medication be given per the manufacturer's recommendations. I'm often asked if it's okay to give the medication every 45 to 60 days rather than every 30 days. The people who ask this tend to be those who really resist giving their animals any medication. While I would like to find (or maybe even invent!) a natural heartworm preventive that's as effective as the monthly oral medications currently prescribed, the low dose of medication contained in these products is way below the toxic or lethal dose.

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When you administer the medication, it is quickly absorbed into the body. If an infected mosquito bites your dog that day, the medication will kill any immature heartworm larvae injected into him by the mosquito. If the mosquito bites the dog a few days later, the medication has already been expelled by the dog's body and the injected heartworm larvae will begin developing. However, if you give the next dose of medication 30 days later, it will kill the developing larvae (despite what some people think, the medication does not work "retroactively" but actually kills developing larvae at the time of administration). If you wait longer than 30 days to give the next dose, then the drug is less effective due to maturation of the heartworm larvae. For this reason, it's really important to give the drug as close to every 30 days as possible.

TREATMENT – CONVENTIONAL MEDICATIONS

Prevention is always preferable to treatment, since the latter is costly, involved, and requires strong drugs. Prior to treatment, it is imperative to confirm the diagnosis. I see a number of animals that test positive for heartworms (usually on the less accurate filter test) but are found to be negative when re-tested using the occult test. These dogs should be tested at least twice more in the next one to two months to make sure they are still negative and don't end up being treated for a disease they don't have.

For dogs that are positive on re-testing, a pre-treatment evaluation is necessary to stage the disease. This includes chest radiographs (X-rays), a blood chemistry profile, CBC, urinalysis, and an EKG. Dogs with heartworm infection will be normal on all these tests, whereas dogs with heartworm disease will show some abnormalities. Even if clinical signs of disease are not present once infection is diagnosed, it is imperative to run these additional tests prior to starting treatment. Normal test results mean treatment can begin, severe

side effects are unlikely, and a baseline value for each test is established in the event complications occur during therapy. In the event any of the tests are positive, further evaluation and treatment is needed before beginning heartworm therapy. This prior treatment is needed to stabilize the dog and make the actual heartworm treatment safer.

Currently, the conventional treatment of choice for heartworm involves a drug called immiticide. It is given via deep intramuscular injection into the lumbar muscles. Treatment is given as a two- or three-dose series of injections. The two-injection protocol (given 24 hours apart) kills about 90% of the adult worms, whereas the three-dose protocol (one injection followed at least one month later by two injections 24 hours apart) kills 98% of the worms. Keep in mind that this standard protocol may be modified depending on the health of the dog, stage of the disease, and any side effects.

Following treatment, the dog should be retested in four to six months to ensure the infection is successfully cured.

WHAT ARE THE SIDE EFFECTS?

Minor side effects seen with treatment include pain and inflammation at the site of the injections. This can be managed with conventional analgesic medications. Additionally, I have often seen panting lasting up to eight to 12 hours following the injection. There is no specific therapy for this and it has always resolved.

Most serious side effects involve blood clotting (thromboembolism) and inflammation of the blood vessels of the lungs. Several factors influence the development of these severe side effects, including pre-treatment disease, the activity level of the dog, the extent of blood vessel disease, and the severity of infection (high versus low worm burdens).

Dead and dying heartworms cause significant damage to the blood vessels. As worms die from natural causes or as a result of treatment, they lodge in the blood vessels of the lungs, causing inflammation and blocking blood flow. During periods of increased activity or exercise, the increased blood flow to these blocked vessels can cause blood vessel rupture, and possibly heart failure. There is a direct correlation between the activity level of the dog and the chance of these side effects occurring.

The greater the number of heartworms killed during treatment, the higher the potential for side effects. Unfortunately, there is no way to accurately determine the number of heartworms present, although some occult tests can indicate the potential for low versus high worm burdens. The best course of action is to assume that post-treatment complications could occur and that every infected dog must be managed with strict rest for four to six weeks following treatment. Signs of post-treatment complications can include coughing, weakness, passing out, and sudden death. If coughing or weakness is seen, aggressive hospitalization and treatment with supportive care, oxygen, IV fluids, and corticosteroids are needed.

NATURAL SUPPORT

Unfortunately, no natural treatments have been proven effective as the sole means to kill adult heartworms. Nevertheless, holistic veterinarians often employ natural medicines at the time of conventional treatment to support the animal during therapy. In my own practice, the following natural medicines have been used safely and effectively.

- Milk thistle helps support the liver as it detoxifies the heartworm medication and dying adult heartworms. Its antioxidant effects may also reduce blood vessel damage caused by the significant oxidation following treatment.
- Mild diuretics such as *dandelion* help encourage urinary elimination of toxins and any fluid that might accumulate in the lungs.
- *Coenzyme Q10* and *hawthorn* can be used to maintain proper heart health and encourage normal blood flow through the pulmonary vessels.
- Lung and cardiac *glandulars* help support the lungs and heart.
- Immune support using *astragalus* or *Echinacea* can support whole body health.
- Homeopathic/homotoxicologic support of the immune system, and a general body detoxification using remedies such as *Berberis* and *Nux Vomica*, are also helpful.
- Symptomatic therapy with herbs and homeopathics can be used for dogs experiencing side effects. For example, muscle soreness after injection with immiticide can be addressed with *Arnica* or *Hypericum*.
- Antioxidants and *fish oil* help reduce the inflammatory reaction that occurs from heartworm infection and treatment.

Heartworm infection and disease is easily prevented with an integrative approach. If treatment is needed, staging the disease and using carefully selected natural therapies will make it more effective and safer.

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