

Alternative Heartworm Adulticide Protocol in Dogs

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In the literature

Alberigi B, Fernandes JI, Paiva JP, et al. Efficacy of semi-annual therapy of an extended-release injectable moxidectin suspension and oral doxycycline in *Dirofilaria immitis* naturally infected dogs. *Parasit Vectors*. 2020;13(1):503.

FROM THE PAGE ...

Canine heartworm disease caused by *Dirofilaria immitis* continues to be a significant problem in many areas of the world despite the availability of effective testing and preventive medications.^{1,2} In the United States, the only FDA-approved adulticidal treatment is melarsomine dihydrochloride, but this drug is relatively expensive and not available in all countries.³ Alternatives to melarsomine have been explored, and several studies have demonstrated that a combination of topical moxidectin and oral doxycycline can be effective in treating adult heartworms.³⁻⁵ Moxidectin is also available as a long-acting injection for the prevention of heartworm disease. In this study,[†] researchers in Brazil aimed to determine if injectable moxidectin combined with oral doxycycline is an effective adulticidal protocol in dogs naturally infected with *D immitis*.

Twenty dogs with naturally occurring *D immitis* infection were enrolled in the study. Dogs ranged from 1 to 8 years of age (mean, 4.85 years), were clinically healthy, and had not received

macrocyclic lactones or doxycycline in the 6 months prior to the study. Each dog was treated with a 12-month extended-release injectable moxidectin suspension (0.5 mg/kg SC once) and doxycycline (10 mg/kg PO twice daily for 30 days) every 6 months. Exercise was not restricted, but pet owners were instructed to help their pet avoid excessive activity.

Physical examination and diagnostic testing (ie, heartworm antigen and microfilaria [mf] count, CBC, serum chemistry profile, thoracic radiography, echocardiography) were performed at baseline and then every 6 months until 2 consecutive negative antigen tests were obtained. Eleven dogs (55%) became antigen negative on day 180, 7 dogs (35%) on day 360, 1 dog (5%) on day 540, and 1 dog (5%) on day 810. Microfilariae decreased from a geometric mean of 4,587 mf/mL at baseline to 2,584 mf/mL at day 30. All dogs were negative for microfilariae on day 150.

The number of dogs with pulmonary signs (ie, cough, dyspnea, harsh expiratory sounds) decreased significantly from baseline to the first negative antigen test. Radiographic signs of enlargement of the main and caudal pulmonary arteries also decreased over time, although no significant reductions in pulmonary bronchial and interstitial patterns were noted. In some dogs, micronodular patterns increased on the first negative antigen test, then returned to baseline on the second negative test. Echocardiography showed normal systolic right ventricular function and no worsening of pulmonary hypertension throughout the study. No adverse effects on body weight or clinical health were noted, and blood work results remained in the normal reference range.

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... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Melarsomine is the standard recommended treatment for adult heartworms in dogs^{6,7}; however, alternative protocols may be considered in cases in which melarsomine is unavailable or cost-prohibitive or in dogs that cannot tolerate the drug.
- 2** Long-acting injectable moxidectin combined with oral doxycycline administered every 6 months appears to be as safe and effective as protocols using topical moxidectin or other macrocyclic lactones. However, this study was not controlled or masked and may not be directly comparable with other studies.
- 3** Injectable moxidectin as used in this study is extra-label and not approved by the FDA or the drug manufacturer. Informed owner consent should be obtained before attempting this protocol in dogs with heartworm disease.

References

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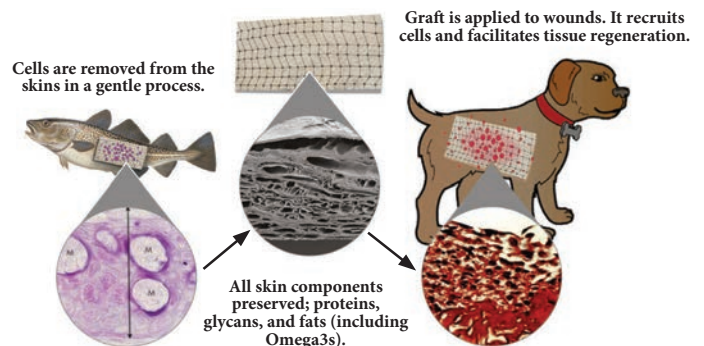
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