

## Anticoagulant Therapy for IMHA



Thrombosis, a common complication of canine immune-mediated hemolytic anemia (IMHA), is responsible for up to 80% of IMHA-related fatalities. Although pathogenesis of thrombotic complications is not fully understood, anticoagulant therapy is a mainstay in dogs with IMHA. The efficacy of anti-platelet agents, including ultra-low dose aspirin and clopidogrel, is unknown. Unfractionated heparin (UFH) requires individualized dosing and close monitoring. For these reasons, low-molecular-weight heparin (LMWH) is frequently used in human medicine.

This retrospective case series evaluated enoxaparin, a LMWH, as the sole anticoagulant in 21 dogs with primary IMHA. All were treated with corticosteroids, and 17 with additional immunosuppressive agents. Median dose of enoxaparin was 0.81 mg/kg SC (q6h in 20 dogs, q8h in 1 dog). Enoxaparin doses were gradually

decreased in frequency over 6-21 days in most dogs. No immediate or delayed adverse reactions associated with enoxaparin, including major hemorrhages, were noted. Two dogs had mild injection-site bleeding. Three dogs did not survive to discharge; necropsy on 2 revealed pulmonary venous thrombi. Of 3 dogs that relapsed and were euthanized in the 6-month follow-up period, necropsy of 1 showed a mesenteric venous thrombus. These survival statistics are comparable with other long-term anticoagulant protocols, but further studies are needed to assess the efficacy and optimal dosing of enoxaparin. Despite the ease of administration reported by owners, the frequency of administration required may make it more feasible for in-hospital use.

### Global Commentary

Treatment for primary IMHA should always include antithrombotic therapy. Heparin (UFH or LMWH) and/or anti-platelet drugs (ultra-low dose aspirin

alone or in combination with clopidogrel) have been used over the past several years with few results. As this paper shows, limited data are available on LMWH dosing protocols and clinical efficacy as sole anticoagulant therapy; thus, use of UFH (initial bolus of 80-100 U/kg followed by CRI of 18 U/kg/h) should still be preferred over LMWH. UFH anticoagulant response should also be monitored using PTT, and guidelines are available to adjust the dose (see *Kirk's Current Veterinary Therapy XV*). The current recommendation is that heparin therapy be tapered over several days and adjunctive antiplatelet therapy instituted to minimize rebound thrombin generation.—*Alice Tamborini, DVM, MRCVS, DECVIM-CA (Internal Medicine)*

### Source

Panek CM, Nakamura RK, Bianco D. Use of enoxaparin in dogs with primary immune-mediated hemolytic anemia: 21 cases. *JVECC*. 2015;25(2):273-277.

## Laser Therapy for CNA

Canine non-inflammatory alopecia (CNA) describes skin diseases characterized by hair loss caused by underlying dysplastic, functional, or endocrine disorders. Causes may include follicular dysplasia, canine pattern alopecia, recurrent flank alopecia, hair cycle arrest, post-clipping alopecia, hypercortisolism, and hypothyroidism. Treatment options are limited in dogs with no treatable underlying disease. In this study, 7 dogs with clinical and histological evidence of CNA were treated twice weekly for 2 months with low-level laser therapy (LLLT) and monitored for clinical response. Each dog acted as its own control; only half of focal lesions were treated, and if the disease was present bilaterally, only 1 side of the dog was treated. Hair regrowth was noted in all 7 dogs with 6 of 7 scored as "greatly improved." Post-treatment skin biopsy findings were available from 1 dog and revealed marked increases in hair follicles in the treated area. LLLT may be a potential therapy for dogs with CNA.

### Commentary

If no obvious underlying cause is found, canine non-inflammatory alopecia can be a frustrating condition to treat. Melatonin is often used but is frequently unsuccessful. This study suggests that low-level laser therapy may provide a new alternative, although larger studies are needed. Before pursuing low-level laser therapy, it is important to rule out treatable endocrine causes of non-inflammatory alopecia (eg, hypothyroidism, hypercortisolism). Given the safety of the treatment, it would be reasonable to try low-level laser therapy in patients where no underlying cause is found.—*William Oldenhoff, DVM, DACVD*

### Source

Olivieri L, Cavina D, Radicchi G, Miragliotta V, Abramo F. Efficacy of low-level laser on hair regrowth in dogs with noninflammatory alopecia: A pilot study. *VET DERMATOL*. 2015;26(1):35-e11.