

# Darbepoetin for Anemia in Dogs with Chronic Kidney Disease

**Marjory B. Brooks, DVM, DACVIM**

*Comparative Coagulation, Animal Health Diagnostic Center  
Cornell University*

## In the Literature

Fiocchi EH, Cowgill LD, Brown DC, et al. The use of darbepoetin to stimulate erythropoiesis in the treatment of anemia of chronic kidney disease in dogs. *J Vet Intern Med.* 2017;31(2):476-485.

## FROM THE PAGE ...

Darbepoetin is a recombinant human erythropoietin analog that has been used to stimulate erythropoiesis and ameliorate anemia signs in dogs and cats with chronic kidney disease.

In this retrospective study, data were compiled about post-treatment hematocrit, optimum maintenance-dosing interval, adverse drug complications, and survival in 33 dogs with chronic kidney disease that were treated with darbepoetin.

Initiation of SC therapy was found to be more effective at 0.8 µg/kg as compared with 0.5 µg/kg; q3wk dosing was found to be the maximal interval that maintained hematocrit after an initial response. Ultimately, 85% of treated dogs attained packed cell volume greater than or equal to 30%, with a median time to response of 29 days. Survival was not significantly different between responders and nonresponders.

Adverse effects associated with darbepoetin therapy included increased blood pressure (36%), seizures (15%), and vomiting and/or diarrhea (9%). Pure red cell aplasia, the most severe complication of darbepoetin therapy, developed in 2 (6%) treated dogs.

## ... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Darbepoetin at a starting dose of 0.8 µg/kg SC once per week, tapered to a maximal treatment interval of once every 3 weeks, appeared to raise and maintain stable hematocrit in dogs with chronic kidney disease.
- 2** Adverse events may include increased blood pressure, seizures, and vomiting and/or diarrhea.
- 3** Owners should be informed about the potential for development of pure red cell aplasia. Darbepoetin-treated dogs should be monitored for sudden drops in packed cell volume and for evidence of red cell hypoplasia.

## Suggested Reading

Agarwal AK. Drug safety profile of darbepoetin alfa for anemia of chronic kidney disease. *Expert Opin Drug Saf.* 2009;8(2):145-153.

Chalhoub S, Langston CE, Farrelly J. The use of darbepoetin to stimulate erythropoiesis in anemia of chronic kidney disease in cats: 25 cases. *J Vet Intern Med.* 2012;26(2):363-369.

Randolph JE, Scarlett J, Stokol T, MacLeod JN. Clinical efficacy and safety of recombinant canine erythropoietin in dogs with anemia of chronic renal failure and dogs with recombinant human erythropoietin-induced red cell aplasia. *J Vet Intern Med.* 2004;18(1):81-91.