

Maropitant & Canine Chronic Bronchitis



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Canine chronic bronchitis (CCB) is an inflammatory airway disease characterized by cough lasting ≥ 2 months in the absence of other primary cardiorespiratory disease. The action of substance P and its neurokinin 1-receptor (NK1-R) is involved in airway inflammation and the cough reflex. Cough suppressants alone are inadequate to treat CCB because they decrease clinical signs without treating underlying inflammation; this can lead to irreversible pulmonary changes and progression of disease. Maropitant, a potent NK 1-R antagonist, has been anecdotally used to treat canine CCB.

This prospective clinical trial assessed the efficacy of maropitant in 8 client-owned dogs with likely CCB. Dogs received maropitant citrate (2 mg/kg PO q48h) for 14 days. Owner surveys and bronchoalveolar lavage (BAL) were conducted at days 0 and 14. Results showed that maropitant significantly decreased the frequency and severity of cough without improving airway inflammation. Although cough improved, the

percentage of neutrophils and eosinophils in BAL samples did not change concurrently over the study period. There was no control group because of inherent risks associated with anesthesia and BAL; therefore, factors such as the placebo effect or the natural waxing and waning course of CCB could not be excluded as reasons for improvement in cough.

The authors concluded that maropitant is not suitable as a sole treatment for CCB because of its lack of benefit for airway inflammation. Future placebo-controlled studies are warranted to determine the efficacy of maropitant as a cough suppressant for dogs with CCB.

Global Commentary

Maropitant can be an extremely efficacious drug for treating vomiting; however, some practitioners may be reluctant to use it primarily as an anti-tussive agent. In fact, suppressing cough without treating underlying pathology might lead to potentially deleterious effects on the patient's lung function. This commentator frequently administers maropitant to prevent emesis in dogs with acute episodes of dyspnea and/or tachypnea to avoid further complications (eg, aspiration pneumonia). Thus, use of neurokinin-1 receptor antagonist should be considered in cases of severe chronic bronchitis, in which both antiemetic and (weak) anti-inflammatory properties of the



drug should be combined with the gold standard treatment for lower airway inflammation.—*Alice Tamborini, DVM, MRCVS, DECVIM-CA (Internal Medicine), European Specialist in Veterinary Internal Medicine-Companion Animals*

Source

Grobman M, Reinero C. Investigation of neurokinin-1 receptor antagonism as a novel treatment for chronic bronchitis in dogs. *J Vet Intern Med.* 2016;30(3):847-852.

Therapeutics Research Note: Extended-Release Levetiracetam

Levetiracetam is an antiepileptic drug with multiple administration routes and few documented drug-drug interactions. Dosing for slow- and extended-release products in humans cannot be accurately extrapolated to dogs. Oral extended-

release levetiracetam was administered to dogs to evaluate the effects of food on drug disposition and to establish a dosing interval to maintain serum concentrations above the minimum therapeutic concentration established in

humans. Results indicated that the recommended dose of extended-release levetiracetam should be 30 mg/kg q12h, although different products and individual animals may have different requirements. Food did not affect drug concentration in any clinically relevant manner.

Source

Beasley MJ, Boothe DM. Disposition of extended release levetiracetam in normal healthy dogs after single oral dosing. *J Vet Intern Med.* 2015;29(5):1348-1353.