Gauging Cardiac or Noncardiac Causes of Dyspnea

This retrospective analysis of 67 cats presenting in respiratory distress assessed the effectiveness of the vertebral heart scale (VHS) to differentiate congestive heart failure (CHF) from other causes of dyspnea. Radiographic diagnosis of feline CHF is challenged by the varied radiographic appearance of pulmonary edema. A heart murmur may not be indicative of primary cardiac disease, and many cats presenting with cardiomyopathy do not have murmurs. Substantiated use of the VHS would help guide therapeutic intervention in emergencies and predict whether echocardiography is likely to be beneficial.

Between 2 investigators with varied experience, there was 83% overall agreement in cardiomegaly assessment. Investigators’ VHS cutpoints were the same for optimizing sensitivity and specificity. A VHS >8 was the best cutpoint when screening for heart disease, and a VHS >9.3 was highly specific for heart disease. Measurements of 8–9.3 suggested equivocal results for cause of dyspnea and the need for echocardiography. Data showed VHS correlated with left atrial diameter from both the long and short axes and left atrial:aortic root (LA:AO) ratio on echocardiography. The statistical agreement between investigators encourages VHS use despite varying experiences. In addition, VHS can help guide therapy in dyspneic cats presenting on emergency when echocardiography is unavailable and to predict echocardiography’s cost benefit.

Commentary

The underlying cause of dyspnea in cats is often difficult to determine, as cats with heart failure can have unusual patterns of pulmonary edema. Initial therapeutic and/or additional diagnostic decisions are typically based on a single lateral thoracic radiograph. Thus, ability to determine from a single lateral thoracic radiograph whether the underlying cause could be related to cardiac disease would be of significant value to the emergency or primary care veterinarian. This study showed that heart failure is an unlikely cause of dyspnea if the calculated VHS is <8 but is highly likely if the VHS is >9.3. VHS values between 8–9.3 still represented a gray area, but therapy for CHF (ie, diuretics) could still be initiated on trial with the caveat that if patients do not improve, primary respiratory causes of the dyspnea should be considered.—Amara Estrada, DVM, DACVIM (Cardiology)

Manuka Oil: Time to Face the Facts

Increasing prevalence of methicillin- and multidrug-resistant Staphylococcus spp has increased interest in alternative treatments, particularly topical agents. Essential oils from plants have long been used for medicinal purposes because of their antibacterial, antifungal, antiviral, insecticidal, or antioxidant properties. In this study, the essential oil from Leptospermum scoparium, commonly referred to as manuka oil, was evaluated for antibacterial activity. Fifty isolates of canine S. pseudintermedius (39 methicillin resistant, 11 methicillin susceptible) were analyzed by measuring minimum inhibitory concentrations using agar dilution and biofilm inhibition by a colorimetric microtiter plate assay. The study found that manuka oil had excellent antimicrobial activity against all isolates and was a potent inhibitor of biofilm production.

Commentary

Hundreds of testimonials to the beneficial effects of manuka oil and other essential oils exist; this is one of a growing list of objective studies documenting the efficacy of a compound that has been used as a natural remedy in New Zealand. The active ingredients of manuka oil are listed as triketones, flavonoids, leptospermone, and isoleptospermone. These products are prominently sold online with claims that may not be substantiated by controlled scientific studies. In this case report, the antibacterial activity against Gram-positive cocci was documented. Little is known about its use in companion animals, but clearly this is an area worthy of investigation: How is it applied? How often? Is it irritating? Are there any potential drug interactions? It is equally important to investigate the benefits of these compounds and any adverse reactions. For now, it is important to ask clients about everything (eg, prescription, over-the-counter, herbal products) used to treat their pet’s skin disease.—Karen A. Moriello, DVM, DACVD

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