Potential Alternative Treatment for CHF

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Although the loop diuretic furosemide is standard treatment for canine congestive heart failure (CHF), diuretic resistance in humans has been associated with increased mortality. Thus, improving or restoring diuretic sensitivity is important for chronic therapy. Torsemide, a loop diuretic and chloride-channel blocker, has a primary site of action on the thick ascending loop of Henle to promote sodium, water, and chloride excretion via inhibition of the Na+/K+/2Cl- cotransporter. In humans, torsemide has greater bioavailability as well as a longer half-life and duration of action than furosemide. The pharmacokinetics of torsemide in dogs is unknown, although preliminary studies have shown its efficacy at one-tenth the dose of furosemide, along with less accompanying potassium wasting.

In this case series, 3 dogs receiving cardiac medications with moderate to high doses of furosemide for advanced heart disease were described. Daily furosemide doses ranged from 4.3–7.8 mg/kg. When each patient experienced recurrent refractory CHF, furosemide was discontinued and torsemide initiated at one-tenth to one-thirteenth the furosemide dose; CHF was resolved in these patients for relatively long durations. Although safety profiles for dogs have not been established, this case review may serve as a basis for establishing trials to demonstrate long-term safety of torsemide.

Commentary

Furosemide is used in both acute and chronic cases of CHF; its potency is potentiated by IV or IM administration in critical patients. Although torsemide may prove to be superior in chronic cases, tablet size and oral administration may limit use in critical or very small animals. However, because renal failure and potassium wasting are key comorbidities in patients with CHF, an alternative loop diuretic may be a viable alternative. The large population of patients with chronic or recurrent CHF could benefit with a different drug choice. —*Heather Troyer, DVM, DABVP, CVA*

Source

Use of the loop diuretic torsemide in three dogs with advanced heart failure. Oyama MA, Peddle GD, Reynolds CA, Singletary GE. ***J VET CARDIOL*** 13:287-292, 2011.

Research Note

Dander: It's a Good Thing?

Childhood atopic dermatitis (AD) is a risk factor for development of asthma, and exposure to indoor allergens may be significant. This study determined the effect of indoor allergens (ie, mouse, rat, cockroach, cat, dog) on asthma development in children with AD. Subjects (age range, 3–18 months) with evidence of AD and family history of atopy were included. Environmental exposures and asthma symptoms were determined by questionnaires completed by caregivers.

Several other factors (eg, age, race, gender, history of breastfeeding/maternal asthma) were also considered. Total IgE and sIgE for house dust and animal mix were obtained to differentiate overall allergic sensitization from exposure. Of 321 subjects enrolled, 299 completed the questionnaire and 55 (18%) developed asthma during the study. Results showed exposure to dog, cat, and mouse dander was inversely related to asthma development, as was daycare exposure. Degree of exposure was associated with decreased risk. Protective effects for cat and daycare exposure were significant across multiple models. Early high-level exposure to cat dander and viral illness in daycare may help produce tolerance rather than allergy, lowering asthma risk in susceptible children.

Source

Effect of cat and daycare exposures on the risk of asthma in children with "atopic dermatitis. Gaffin JM, Spergel JM, Boguniewicz M, et al. ***ALLERGY ASTHMA PROC*** 33:282-288, 2012.

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CONTINUES

Allergen-Specific Immunotherapy

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Allergic rhinitis in humans is a worldwide problem. A number of treatment options exist, but allergen-specific immunotherapy (AST) may reduce clinical signs and improve quality of life in human patients who are unresponsive to therapy or have severe symptoms. However, because AST is traditionally administered by SC injection in clinics, which may increase safety but can add logistic problems, patient dropout can be a factor. Sublingual immunotherapy (SLIT) in humans in the form of drops or tablets has been an alternative treatment approach. In this review, data from 2333 active SLIT patients and 2256 placebo patients were reviewed and treatment efficacy was evaluated. Seasonal and perennial allergens were evaluated, and there appeared to be a greater treatment effect with perennial allergens. No fatalities were reported, although there were 6 reports of severe reactions. Adverse events were infrequent; the most common complaint was tingling/swelling of the oral mucosa after administration. SLIT appeared to be a safe, effective treatment option for allergic rhinitis.

Commentary

This review of the efficacy of SLIT involved allergic rhinitis in humans, not atopic dermatitis in dogs. Although SLIT therapy has been used for >50 years and is widely accepted in Europe; its use in the United States is more recent. The subject of efficacy has been vigorously debated, as some studies concluded its efficacy while others contested it. Of note is the considerable variation in dosing protocols. Over 628 study papers were found in the literature review, but only 60 met the criteria for well-designed studies. SLIT therapy or allergy drops have been the subject of research in veterinary dermatology for management of atopic dermatitis. Allergy drops for dogs are an alternative to injections.—*Karen A. Moriello, DVM, DACVD*

Source

Systematic reviews of sublingual immunotherapy (SLIT). Radulovic S, Wilson D, Calderon M, Durham S. *ALLERGY* 66:740-752, 2011.