IMHA: Which Regimen Works Best?

Immune-mediated hemolytic anemia (IMHA) is a type II autoimmune response directed at antigens expressed on the surface of red blood cells. A variety of immunosuppressive agents are used in IMHA treatment; however, evidence for the effectiveness of specific drugs or proper combinations of drugs is lacking. This study evaluated 42 dogs that were treated for IMHA but for which no clinical underlying cause could be found. All except 5 dogs received 1 of 3 immunosuppressive treatment regimens: prednisolone and cyclosporine (n = 17), prednisolone and azathioprine (n = 9), or prednisolone alone (n = 11). The remaining 5 dogs received all 3 or different combinations of drugs, but group sizes were too small for inclusion. Azathioprine and cyclosporine were given at median dose rates of 1.8 mg/kg PO Q 24 H (range, 1.3–2.7 mg/kg) and 5.0 mg/kg PO Q 24 H (range, 3.0–8.0 mg/kg), respectively. Daily dose rates for prednisolone varied between the treatment groups, with ranges of 1.0 to 4.0 mg/kg PO Q 24 H. Adjunctive therapies included transfusions of whole blood or packed red blood cells, gastroprotectants, GI promotility drugs, heparin, and low-dose aspirin. Two dogs also received single injections of cyclophosphamide and 4 dogs received human γ-globulin. No dog received both cyclophosphamide and human γ-globulin.

Mortality rates between groups suggested that treatment regimens had a significant effect on the outcome of cases. The apparent difference in mortality may have been affected by doses of immunosuppressive treatment regimens as well as adjunctive treatments. Overall, the small sample sizes made direct correlations difficult. Increased serum bilirubin and serum urea values were noted to be negative prognostic indicators.

Commentary: This study attempted to evaluate three treatment regimens for IMHA. In my opinion, limitations due to its retrospective nature, small sample size, and treatment variability (eg, dosing) rendered it inadequate. Also, while the degree of elevation in bilirubin and urea was statistically significant, it did not appear to be *clinically* significant; this information should not be used as a negative prognostic factor nor should patients be condemned based on mild elevation in these values. Lastly, the use of low-dose aspirin to prevent pulmonary thromboembolism is generally considered a standard of care with IMHA patients but was not adequately evaluated in this study. A benefit of the study was the finding that higher doses of prednisolone (>2 mg/kg Q 24 H) may not be necessary and that using an appropriate yet effective dose may help minimize adverse events.—*Justine Lee, DVM, Diplomate ACVECC*

Evaluation of immunosuppressive regimens for immune-mediated haemolytic anaemia: A retrospective study of 42 dogs. Swann JW, Skelly BJ. ***J SMALL ANIM PRACT*** 52:353-358, 2011.

Research Note

Adiponectin & Type 2 Diabetes in Dogs and Humans

Obese dogs develop insulin resistance but do not develop type 2 diabetes mellitus. In obese humans, low adiponectin is associated with progression to type 2 diabetes. This study compared total and high molecular weight (HMW) adiponectin and the ratio of HMW with total adiponectin in dogs and humans. It also examined whether total or HMW adiponectin or both is associated with insulin resistance in naturally occurring obese dogs. In lean dogs, adiponectin mean total concentrations were approximately 3 times higher and absolute HMW adiponectin approximately 4 times higher than in lean humans. Total adiponectin, HMW adiponectin, and the ratio of HMW-adiponectin-to-total-adiponectin were not associated with insulin sensitivity in dogs. Species differences in adiponectin may provide insight into the molecular basis for species-specific disease development and a greater understanding of therapeutic approaches to prevent the progression of type 2 diabetes.

Distinct adiponectin profiles might contribute to differences in susceptibility to type 2 diabetes in dogs and humans. ***DOMEST ANIM ENDOCRINOL*** 41:67-73, 2011.

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