Taurine Deficiency—in Dogs

Two recent studies in dogs have examined taurine deficiency apparently related to commercially available dry diets that meet established nutrition recommendations. In a retrospective study, 12 client-owned dogs with low concentrations of taurine in blood or plasma that had dilated cardiomyopathy (DCM) were being fed a commercial dry diet containing lamb meal, rice, or both as primary ingredients. In addition, a prospective study evaluated taurine deficiency in a Newfoundland cohort (19 dogs, including 1 with DCM) being fed a commercial dry lamb meal and rice diet. Medical records and diet histories were reviewed, and clinical data were obtained in both studies.

In the 12 taurine-deficient dogs with DCM in the retrospective study, cardiac function and plasma taurine concentration improved with treatment and taurine supplementation. Of the dogs that were still alive at the time of the study, 7 were receiving no cardiac medications except taurine. Of the 19 Newfoundlands in the prospective study, 12 had plasma taurine concentrations that were considered deficient, which was reversed by a change in diet or methionine supplementation.

Both studies suggest that consumption of certain complete and balanced diets may be associated with taurine deficiency in some dogs and can lead to DCM. Taurine supplementation may result in prolonged survival times in these dogs, which is not usual for dogs with DCM. Taurine deficiency was reversed by a change in diet or supplementation, which may have implications for cats with taurine deficiency. Blood samples for dogs with DCM should be submitted for taurine concentration assay. Supplementation is recommended pending results.

COMMENTARY: As these 2 studies suggest, dogs fed otherwise complete and balanced commercially available dry diets can develop taurine deficiency, because of breed predisposition or taurine availability or because minimum requirements need to be reevaluated and pet foods reformulated. Dogs and cats with DCM should be monitored for taurine deficiency, and supplementation should be given when needed. Pet food companies now recognize that taurine supplementation is also needed in at least some dogs. Cat foods are often supplemented with taurine because it is an essential amino acid for them and processing has a deleterious impact on its availability.—Patricia Thomblison, DVM, MS
