Effects of dietary modification in dogs with early chronic valvular disease.

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BACKGROUND: The potential benefits of nutritional modification in early canine cardiac disease are not known. HYPOTHESIS: We hypothesized that echocardiographic, neuroendocrine, and nutritional variables will differ between dogs with asymptomatic chronic valvular disease (CVD) and healthy controls, and that a moderately reduced sodium diet enriched with antioxidants, n-3 fatty acids, taurine, carnitine, and arginine will alter these variables in dogs with CVD. METHODS: Echocardiography was performed and blood was collected. After baseline comparison with healthy controls, all dogs with CVD were fed a low-sodium run-in diet for 4 weeks, reevaluated, and then randomized to receive either the cardiac diet or a placebo diet for 4 weeks. RESULTS: At baseline, dogs with CVD (n = 29) had significantly lower circulating sodium, chloride, arginine, and methionine concentrations and higher plasma concentrations of atrial natriuretic peptide compared to healthy controls. In dogs with CVD, plasma aldosterone concentration and heart rate increased significantly after 4 weeks of eating the run-in diet. The cardiac diet group (n = 14) had larger increases in levels of cholesterol (P = .001), triglycerides (P = .02), eicosapentaenoic acid (P < .001), docosahexaenoic acid (P < .001), total omega-3 fatty acids (P < .001), vitamin C (P = 0.04), alpha-tocopherol (P < .001), and gamma-tocopherol (P < .001) compared to the placebo diet group (n = 15). The cardiac diet group also had larger reductions in maximal left-atrial dimension (P = .003), left-ventricular internal dimension in diastole (P = .03), and weight-based maximal left-atrial dimension (P = .03). CONCLUSIONS AND CLINICAL IMPORTANCE: Observed changes in both blood variables and echocardiographic measurements warrant additional studies on dietary modifications in dogs with early CVD.

Publication Types:
- Randomized Controlled Trial
- Research Support, Non-U.S. Gov't

PMID: 17063703 [PubMed - indexed for MEDLINE]