

Incidence of canine dilated cardiomyopathy, breed predispositions, and grain-free diet sales in the United States from 2000-2019: a retrospective survey

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Background: Dilated cardiomyopathy (DCM) is considered a predominantly inherited disease in dogs. Recent reports suggest an increased incidence of DCM in atypical breeds eating grain-free and/or legume-rich diets. However, little data regarding incidence of DCM within the U.S. is available; and no existing data quantifies DCM among breeds over time, making it difficult to conclude if a true increase in canine DCM is occurring.

Hypothesis: We hypothesized that DCM incidence among breeds could be estimated by retrospective polling of veterinary cardiologists, and this data could be used to evaluate whether a trend with increased grain-free pet food sales existed.

Materials and Methods: Thirty-six U.S. cardiology specialty practices were asked for annual number of *unique canine patients* and *new canine DCM cases* evaluated from 2000-2019. The data were evaluated using a linear regression model. Additional signalment data was provided from 3 hospitals (2 additional data sets pending). Grain-free pet food sales data was available from 2011-2019.

Results: A total of 14 hospitals participated and reported >55,000 unique canine patients. Nationally, data did not support a significant change in % DCM over time ($p=0.09$). The overall average incidence rate of DCM during the study period was 3.86% (range 2.41-5.65%), while grain-free diet sales increased 500% from 2011- July 2020. DCM signalment data was provided by 3 hospitals over 15 years; 56 breeds were represented, with no upward or downward trend in breed demographics appreciated.

Conclusions: These data do not support an overall increased DCM incidence, or a correlation with grain-free pet food sales. Variability in DCM breed distribution is present; with no trend to support concerns for a recent increase in atypical breeds. State by state canine demographics, infectious disease prevalence, and pet food sales per state are necessary to understand whether regional factors may contribute to increased DCM within smaller cohorts.