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Epidemiology of canine hyperadrenocorticism in primary-care veterinary practices in England

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Purpose

Hyperadrenocorticism (HAC) can severely compromise welfare but limited epidemiological data exist on the general canine population. This study aimed to estimate prevalence and identify risk factors for HAC in a large population of dogs attending primary-care practice in England.

Methods

The VetCompass programme shares de-identified veterinary data for research; 470 clinics have shared 11 million clinical records on 4 million animals. The free-text clinical notes and standard diagnoses (VeNom Codes) of 210,824 dogs attending 119 clinics were searched to identify potential HAC cases and a random subset was verified by manual review. Analyses used Stata Version 13. Prevalence was reported over a one-year period; probability weighting accounted for the sampling protocol. Risk factor analysis used multivariable logistic regression. After backwards stepwise elimination, the area under the ROC curve was evaluated model performance.

Results

Review of 52% of potential cases identified 304 cases. The estimated prevalence was 0.28% (95% confidence interval (CI) 0.25-0.31). There were 127 (41.8%) deaths at a median age of 12.7 years (interquartile range 10.9-14.2, range 5.8-17.6).

Four risk factors were identified: breed, relative bodyweight, age and insurance. Bichons (OR: 6.5, 95% CI 3.5-12.2, P < 0.001) and Yorkshire Terriers (OR: 1.9, 95% CI 1.0-3.5, P = 0.042) had increased odds compared with crossbred dogs. Dogs at or above mean bodyweight for breed had 1.7 (95% CI 1.3-2.3, P < 0.001) times odds compared with dogs below the mean. Increasing age was associated with increasing HAC diagnosis Insured dogs had 3.8 (95% CI 2.7-5.4, P < 0.001) times the odds compared with uninsured dogs. The final model showed good discrimination (area under the ROC curve: 0.951).

Conclusions

About 1-in-400 dogs has a HAC diagnosis. Bichons and Yorkshire Terriers are over-represented.

Relevance

This study highlights the innovative usefulness of large aggregates of veterinary clinical data to explore complex questions on companion animal health. These findings can improve HAC detection using breed, relative bodyweight and age indicators. Insurance may play a role in facilitating diagnosis.