Epidemiology of mast cell tumour in dogs

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Background

- Mast cell tumour (MCT) is the most common malignant skin tumour in dogs - representing ~20% of sampled cutaneous neoplasms[1] (Figures 1,2)
- Understanding the epidemiology of MCT in dogs will help general practitioners identify at risk patients

Figure 1: Cutaneous MCT in the dog © Aleksandra Kozačinski MRCVS

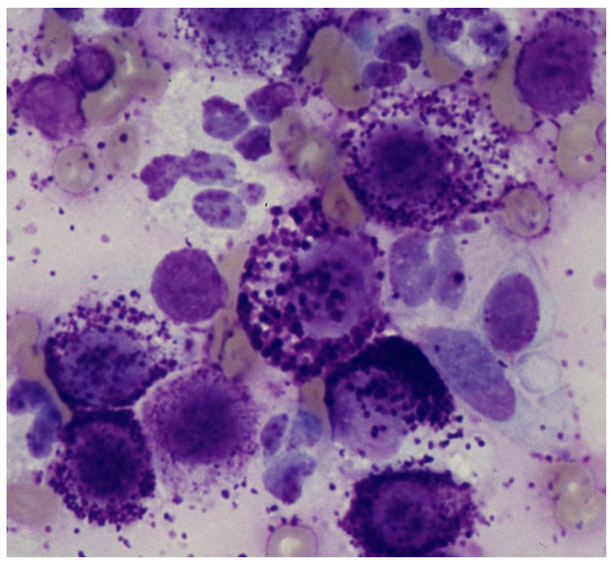


Figure 2: Cytology from a mast cell tumour © RVC Image Bank

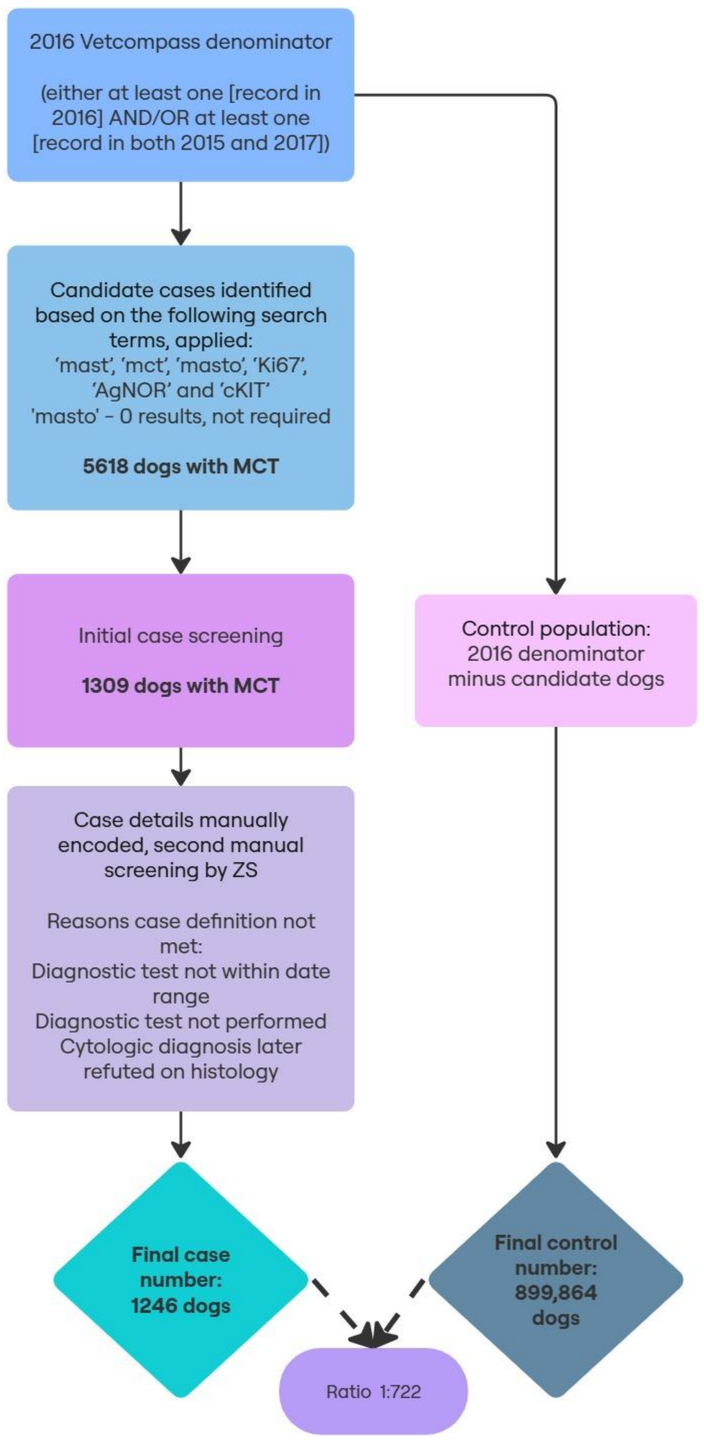
Objectives

(1) Evaluate frequency of MCT cases in 2016 VetCompass database

(2) Investigate demographic risk factors for diagnosis with MCT

Methods

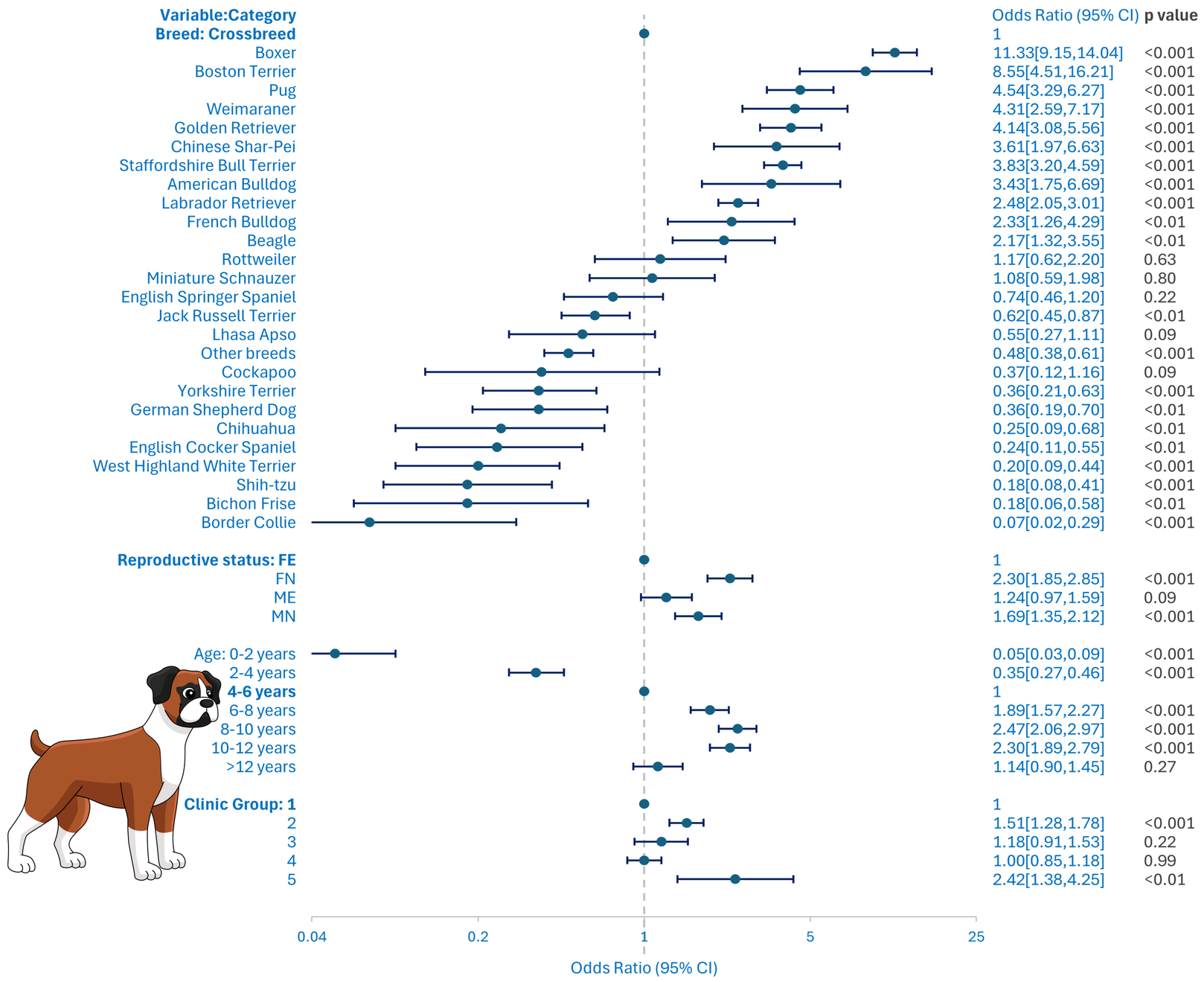
VetCompass holds a database of de identified electronic health records from >1300 UK first opinion veterinary practices



Results

- **Incidence: 140 per 100,000 dogs per year** (0.14%, 95% confidence interval (CI): 0.13-0.15)
- Breed specific incidence within 5 most represented breeds: Boxer: 1.52% (95% CI: 1.28-1.79%), Golden Retriever: 0.58% (0.44-0.75%), Staffordshire Bull Terrier: 0.50% (0.44-0.57%), Labrador Retriever: 0.33% (0.29-0.38%), Pug: 0.28% (0.20-0.37%)
- Within dogs with MCT: 675 female (54%) of which 579 were neutered (86%) and 96 (14%) were entire; 571 male (45%) of which 393 (69%) were neutered and 178 (31%) were entire
- Median age at diagnosis: 8.12 years (interquartile range IQR: 6.18-10.10 years)
- Median weight of dogs diagnosed with MCT: 24.7kg (IQR: 17.03-31.64kg)
- **Breed, age, neuter status** and clinic group (to account for case clustering) were retained for final multivariable model

Multivariable logistic regression: Demographic risk factors associated with diagnosis with MCT



Conclusions

- Demographic features are associated with probability of diagnosis with mast cell tumour
- Predisposed breeds include Boxer, Boston Terrier, Pug, Weimaraner, Golden Retriever, suggesting a genetic component

Ongoing work

- Describe features of MCT cases: tumour location/size, histological features, staging performed, treatment modalities
- Design Cox Proportion Hazard model for survival. Unique eight-year follow-up within the dataset
- Perform similar analysis in Golden Retriever Lifetime Study (GRLS) cohort, in a breed which is predisposed to MCT

WOAH Collaborating Centre for Risk Analysis & Modelling

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