The epidemiology of haemangiosarcoma in dogs

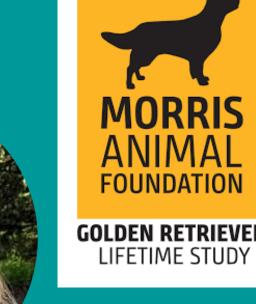
under veterinary care in the UK in 2019

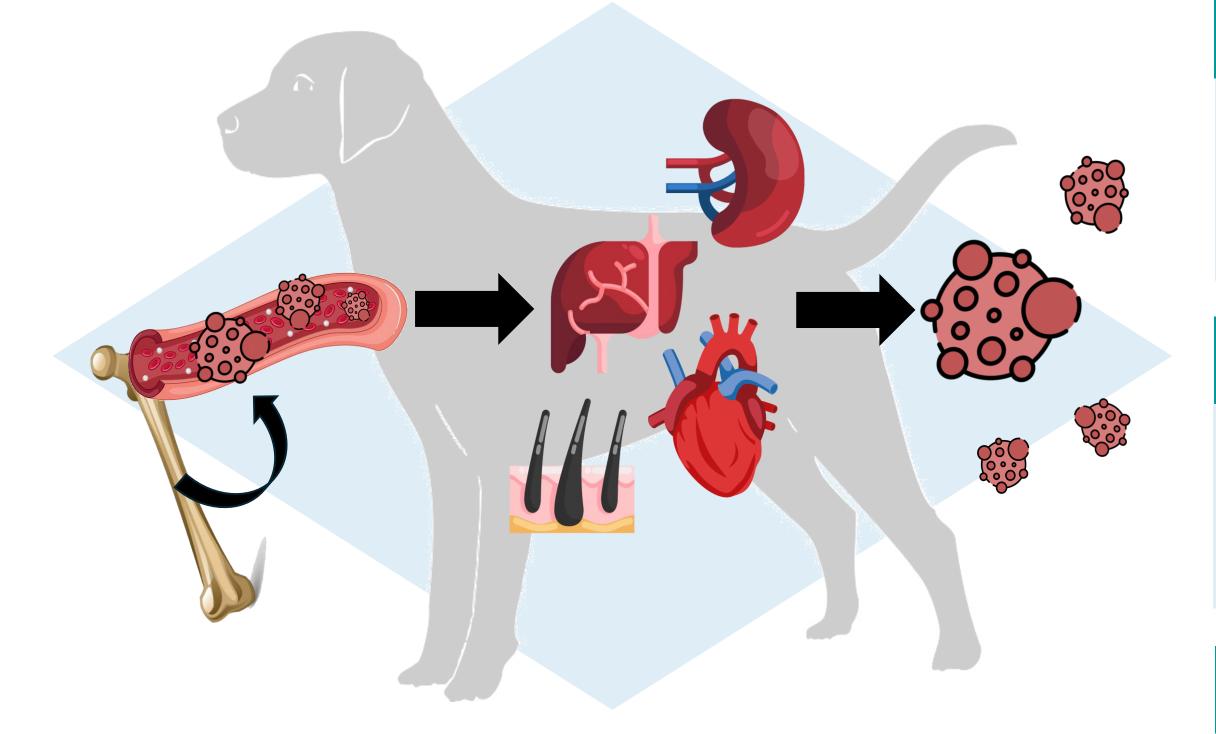


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BACKGROUND

Haemangiosarcoma (HSA) is a malignant neoplasia that originates from vascular endothelial cells. Visceral forms of HSA have an extremely poor prognosis and few dogs live 1 year beyond diagnosis¹.

AIMS and OBJECTIVES

- Estimate the frequency of canine HSA in dogs \geq 5 years old in the UK in 2019.
- Evaluate signalment and socioeconomic risk factors of HSA in dogs \geq 5 years old in the UK in 2019.

RESULTS

Incident cases: 790 dogs, Controls: 1,065,382 dogs Incidence: 0.035% (95% CI: 0.03-0.38)

39.5% of cases were confirmed with histopathology.

Of cases that were known to have died, **87.7**% died of causes **related to HSA**.

METHOD



Clinical records from over 1,800 veterinary practices in the UK. Dogs with at least one clinical record in 2019. **Denominator** population = 2,250,741 dogs



haemangios*, hemangios*, HSA (not casesensitive), angiosa*, haemangiosarcoma~1, hemangiosarcoma~1, hameangios*

Candidate cases manually assessed and classified into cases and non-cases:

• Incidence cases: diagnosed by a vet or histopathology between 1st Jan and 31st Dec 2019 (inclusive).

Non-candidate cases used as control population.

Age of controls and cases restricted to ≥5 years old.

Statistical analysis



- Prevalence and incidence calculations
- Univariable analysis Fisher's exact test, X² test, Mann-Whitney U test.
- Fixed effect multivariable logistic regression modelling (p<0.05).

Multivariable analysis of signalment risk factors for HSA in dogs ≥5 years old in the UK in 2019 **Odds Ratio** P-value Variable and category (95% CI) Sex and neuter status: Female entire Male neutered 1.54 (1.21-1.96) < 0.001 1.32 (1.04-1.68) Female neutered 0.022 1.19 (0.91-1.55) Male entire 0.197 **Breed: Crossbreed** Dogue de Bordeaux 9.53 (4.20-21.64) < 0.001 Flat Coated Retriever 8.06 (3.95-16.44) < 0.001 Hungarian Vizsla 6.20 (3.36-11.44) < 0.001 6.14 (4.73-7.98) German Shepherd Dog < 0.001 3.54 (2.31-5.43) < 0.001 Boxer 3.11 (1.64-5.89) < 0.001 Rottweiler 2.47 (1.43-4.26) 0.001 Beagle 2.15 (1.25-3.71) 0.006 Lurcher Golden Retriever 2.05 (1.33-3.17) 0.001 Labrador Retriever 1.42 (1.11-1.83) 0.005 Purebreed other 0.75 (0.59-0.95) 0.017 Age at diagnosis: 5 < 7 years 7 < 9 years 4.54 (3.20-6.44) < 0.001 9 < 11 years 9.28 (6.62-13.01) < 0.001 11 < 13 years 11.96 (8.51-16.82) < 0.001 13 < 15 years 8.71 (5.95-12.75) < 0.001 ≥ 15 years 3.20 (1.64-6.27) < 0.001 Practice group: 1 1.16 (0.97-1.38) 0.115 0.80 (0.65-0.97) 0.026 0.77 (0.45-1.31) 0.330 0.70 (0.55-0.89) 0.004 Clinic deprivation: (most deprived) 1 1.39 (1.07-1.79) 0.012 1.47 (1.14-1.89) 0.003 (least deprived) 5 1.68 (1.30-2.17) < 0.001 0.25 0.50 8.00 16.00 1.00 2.00 4.00 **Odds Ratio**

CONCLUSIONS

- Canine HSA had an incidence of 0.035% in dogs ≥5 years old in the UK in 2019.
- Breed and age had the strongest multivariable associations, however, sex/neuter status, practice group and clinic deprivation also contribute to canine haemangiosarcoma in the UK.

ACKNOWLEDGEMENTS

REFERENCES