



Breed-related disorders in three dog breeds quantified in primary practice data

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Introduction

The current public and professional opinion is that many dog breeds suffer health issues related to 1) inherited disease or 2) extreme phenotype. However, supportive quantitative data is yet unavailable.

The **aim** of this cohort study was to evaluate the breed-related disease burden in three dog breeds in comparison to mixed-breed dogs: Chihuahua, French Bulldog, and Labrador Retriever.

Methods

Qualitative query

- 1: Literature review; list of diseases
- ↓
- 2: Expert opinion of University veterinary specialists; diseases and organ systems
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- 3: Patient data University referral clinic; organ systems

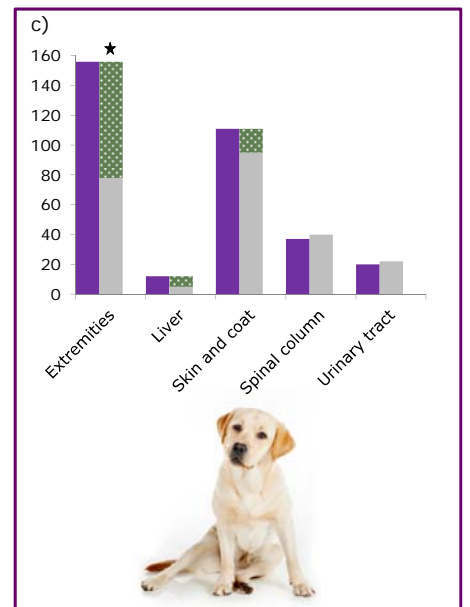
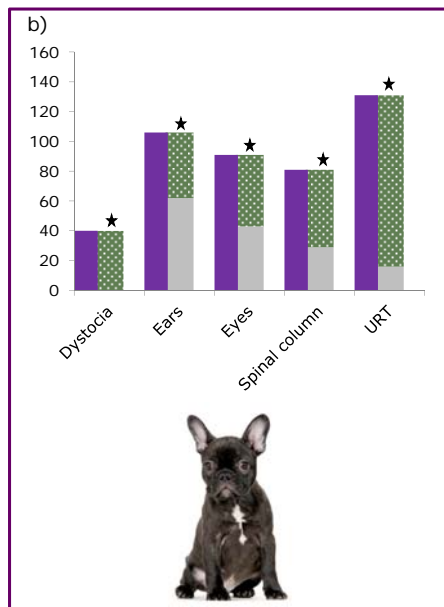
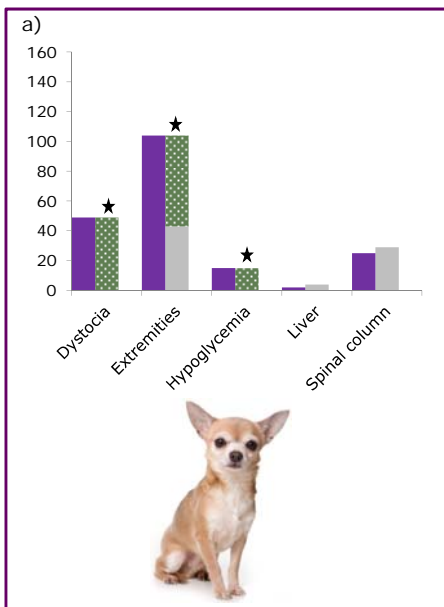
Quantification

4: Evaluation of disease burden of *five* most important organ systems/diseases for each breed; Risk Difference (per 1,000 presented dogs) & Age at presentation (in years)

Patient files from ten primary practices over a period of two years were manually extracted and examined. Based on a power calculation, per breed 400 individual dog records were randomly selected as well as 1,000 mixed-breed dog records, weighted per practice size.

Results

Population disease burden Number of cases per 1,000 presented animals and estimated risk difference. a) Chihuahua, b) French Bulldog, c) Labrador Retriever (risk difference ■ = breed ■ – mixed-breed ■, * P<0.05 Fisher Exact, URT = upper respiratory tract)



Individual disease burden: significant differences

Breed	Disease	Age at presentation (in years) median (min-max)	
		Breed	Mixed-breed
Chihuahua	Patellar luxation	1.7 (.2-9.0)	5.6 (.4-15.3)
French Bulldog	Hernia nucleus pulposus type I	3.7 (.9-11.1)	8.4 (.2-14.8)

Conclusions

- The estimated risk difference is indicative of disease burden in the population.
- The French Bulldog population shows a higher risk in all five evaluated organ systems, of which three are related to breed standard requiring extreme phenotype, while that of the Labrador has a very high risk difference related to an inherited disease.
- A lower age at presentation, interpreted as age of onset, indicates a higher disease burden for the individual dog. This will need to be analysed further.
- Population based data provide much needed quantitative evidence to inform policy makers such as breeders and their breed organizations.