Exposing pedigree dogs using disorder prevalence evidence

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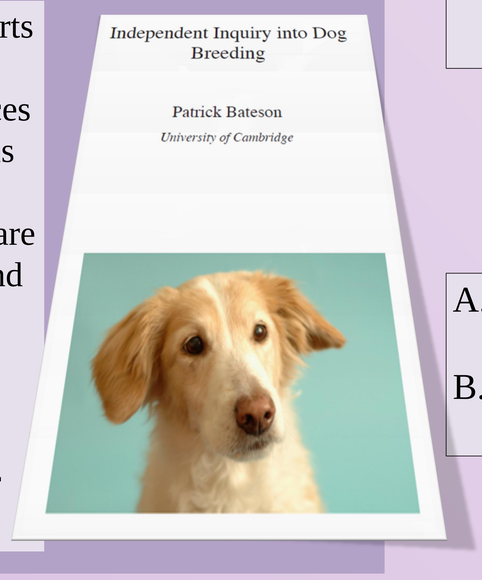
Is there a 'pedigree dog' problem?

August 2008: BBC *Pedigree Dogs Exposed* [1] alleges that 'Pedigree dogs are falling apart' because of inbreeding and ill-advised breed standards.

2009-2010: Three major reports [2,3,4] conclude:

- Purebred breeding practices are associated with serious welfare problems.
- Reliable prevalence data are required to .understand and prioritise the issues.

The reports all recommended systemised collection of veterinary clinical records for evidence generation.



Prior study belief

'Pedigree dog' health issues do exist but we do not have adequate evidence to define or quantify the problems.

Study Objectives

A. Create a large research resource of merged primary-care veterinary clinical data.
B. Use this resource to provide disorder prevalence information on the most common disorders in dogs in England.

Primary-care data project

- Collaborating practices record diagnoses using the VeNom Codes [5].
- Clinical queries extract de-identified data from practice-management systems.
- Automated weekly uploads of data to a secure FTP site.
- Uploaded data are cleaned and reformatted to a standard VetCompass format.
- Data are merged into a structured query language (SQL) database.
- VetCompass database queries identify animals of interest.
- A bespoke Coding App extracts additional information on study cases.

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Results

VetCompass Database (Oct 2014)

Contributing practices	299
Total animals	1.5 million
Unique Dogs	810,000
Total episodes of care	10.5 million
No. Practice Management Systems	11

Dog prevalence study

Study design [6]

- Study population: All VetCompass dogs Sept 2009 to March 2013.
- Data: breed, age, sex/neuter, insurance, weight, notes, diagnosis.
- Random sample for detailed review to extract all disorder data.

Methods

- Descriptive statistics reported demography and disorder prevalence.
- Prevalence comparisons used chi^2 test with Holm-adjusted P-values to account for multiple testing effects. Statistical sig.: $P < 0.05$.

Results

- 3,884 dogs reviewed from 148,741 dogs at 93 practices.
- Demography: purebred 78.9%, female 48.0%, neutered 41.1%, insured 29.2%, median weight 18.2 kg, median age 4.5 years.
- 430 distinct disorders diagnosed.
- Top disorders: otitis externa and periodontal disease (Fig 1).
- Higher prevalence in purebred dogs than crossbreds for three of top twenty disorders: otitis externa (P = 0.001), obesity (P = 0.006) and skin mass lesion (P = 0.033).
- Popular breeds differed for four of the top seven disorders (Fig 2).

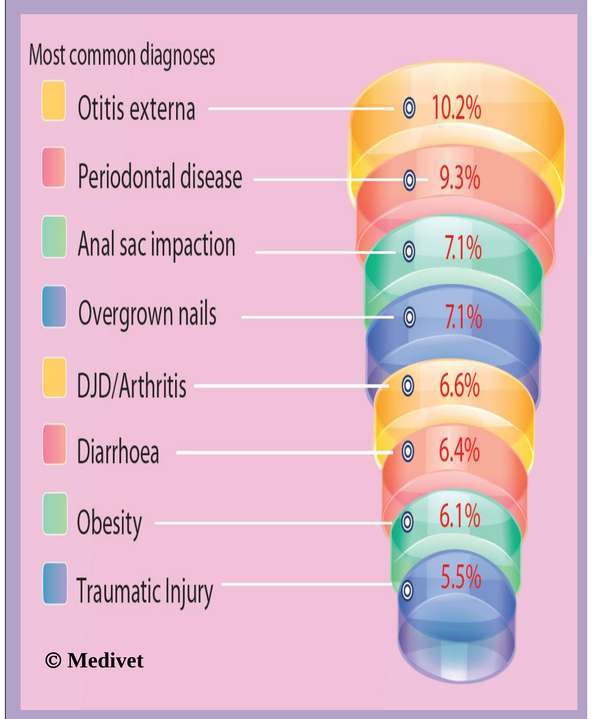

Figure 1: Prevalence of the most common disorders in dogs

Results

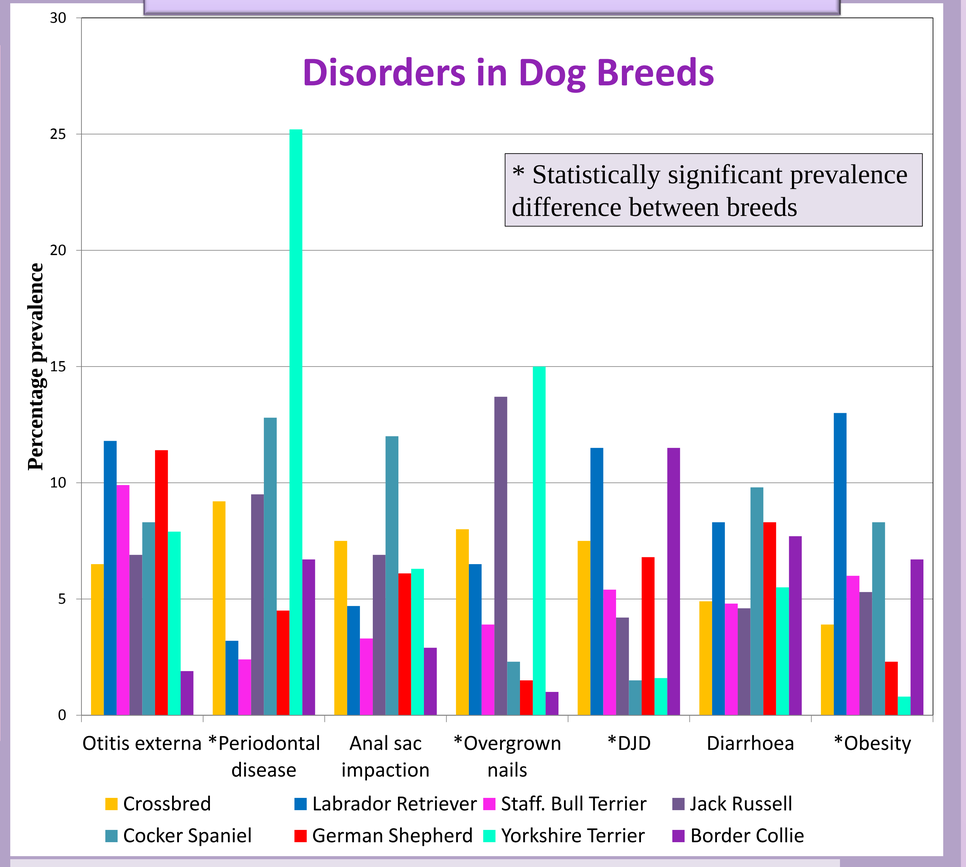

Figure 2: Disorder prevalence in crossbred and popular breeds of dog

1. BBC. *Pedigree Dogs Exposed. 2008 Available from: http://www.bbc.co.uk/pressoffice/pressreleases/stories/2008/08_august/19/dogs.shtml.*
2. Bateson, P., *Independent inquiry into dog breeding. 2010, University of Cambridge: Cambridge.*
3. Rooney, N.J., *The welfare of pedigree dogs: cause for concern. Journal of Veterinary Behavior: Clinical Applications and Research, 2009.* ***4(5): p. 180-186.***
4. APGAW, *A healthier future for pedigree dogs. 2009, The Associate Parliamentary Group for Animal Welfare: London*
5. The VeNom Coding Group. *VeNom Veterinary Nomenclature. 2013; Available from: http://www.venomcoding.org.*
6. O'Neill, D.G., et al., *Prevalence of disorders recorded in dogs attending primary-care veterinary practices in England. PLoS One, 2014.* ***9(3): p. 1-16.***

Conclusions

- *Evidence of limited purebred/crossbred prevalence variation.*
- *Evidence for substantial prevalence variation between breeds.*
- *Primary-care vet practice data are useful for research.*

✓ **Health reforms targeted to specific breeds are most promising.**