Royal Veterinary College
University of London

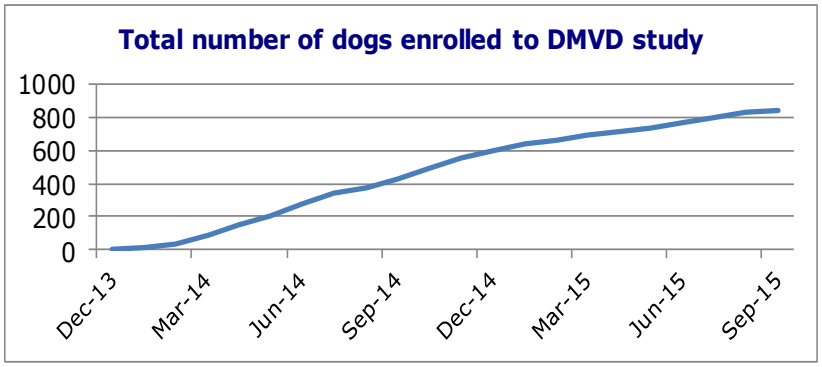
VetCompass
Your Knowledge Hub

Petplan CHARITABLE TRUST

Degenerative mitral valve disease study

Project progress

Thank you for your participation in our prospective study on the survival characteristics of dogs with degenerative mitral valve disease (DMVD), which is supported by **Petplan Charitable Trust**. An impressive **855 dogs** have now been enrolled to the study by 78 primary-care veterinary practices (October 2015).



There have been many other exciting developments within DMVD research over the last few months. Our **retrospective VetCompass DMVD** work has been presented at an international conference and published in two journals. Please see below and page 2 for highlights.

Also featured is a further DMVD study led by Professor Adrian Boswood, one of our project supervisors. Page 3 summarises the main findings of the paper, which looks at a clinical severity scoring system in dogs with DMVD.

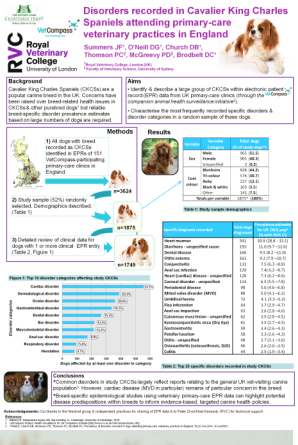
There are just a few weeks left to recruit dogs with DMVD into our **prospective VetCompass DMVD study,** so we would be delighted if you wish to enrol any final cases. Dogs benefit from **free cardiac biomarker tests**. A reminder of our **study protocol** can be found on page 4.

VetCompass at SVEPM conference

This year, the Annual conference of the Society for Veterinary Epidemiology and Preventative Medicine (SVEPM) attracted over 200 delegates from across the world. A diverse range of veterinary topics were covered by experts and researchers through workshops, oral and poster presentations.

Dr Dave Brodbelt, a VetCompass project leader and the primary supervisor of the VetCompass DMVD study, chaired sessions entitled 'Epidemiology of Companion Animals' and 'Robustness of statistical methods'. Dave also presented work on the survival of dogs with DMVD, which has recently been published in the journal of Preventative Veterinary Medicine (see page 2 for details).

Dr Jen Summers, a VetCompass researcher, presented a poster on common disorders of cavalier King Charles spaniels. For further details, please visit our website: **www.rvc.ac.uk/VetCompass.**



VetCompass canine cardiac research

Historical data collected within the VetCompass database was used to estimate how often DMVD was diagnosed in dogs and to look at factors associated with diagnosis and prognosis of the disease. Our retrospective study results have now been published!

Prevalence of and risk factors for degenerative mitral valve disease in dogs attending primary-care veterinary practices in England. *Journal of Veterinary Internal Medicine*

Study design: Cross-sectional study. Cases of DMVD were identified within the records of all dogs attending 93 veterinary practices. The characteristics of DMVD cases were compared with those of non-cases (dogs without DMVD).

Main outcomes:

- 0.36% of dogs had a specified diagnosis of DMVD; 3.54% of dogs had a heart murmur consistent with DMVD.
- Males were more likely to have a diagnosis of DMVD than females (Odds ratio (OR) 1.40; 95%CI: 1.12-1.74).
- Insured dogs were more likely to be diagnosed with DMVD than uninsured dogs (OR 3.56; 95%CI: 2.79-4.55).
- Dogs 20kg or more had approximately half the odds of being diagnosed with DMVD than dogs less than 20kg (OR 0.51; 95%CI: 0.36-0.74)
- The risk of DMVD increased with age. The mean (average) age at diagnosis was 9.5 years.
- Breed was strongly associated with DMVD diagnosis. The following breeds had a statistically significant increased risk of DMVD diagnosis compared with crossbred dogs:

Odds ratios larger than 1 mean that dogs with this factor have an **increased risk** of DMVD diagnosis compared with the baseline group. E.g. males (OR 1.40) have a higher risk than females.

Odds ratios smaller than 1 mean that dogs with this factor have a **decreased risk** of having DMVD diagnosed compared with the baseline group. E.g. Dogs >20kg (OR 0.51) have a reduced risk of DMVD diagnosis compared with dogs <20kg.


Cavalier King Charles


King Charles Spaniel


Chihuahua


Whippet


Poodle


Shih Tzu


Yorkshire Terrier


Border Collie

Degenerative mitral valve disease: Survival of dogs attending primary-care practice in England. *Preventative Veterinary Medicine*

Study design: Cohort study. A group of dogs with DMVD attending primary-care practices were followed over time to see which factors were associated with prognosis (all cause mortality).

Main outcomes:

- The median survival time for all-cause mortality was 2-3 years (time following disease detection when the cumulative proportion of dogs surviving fell to 50%).
- Purebred dogs (Hazard ratio (HR) 1.86; 95%CI: 1.07-3.23) and Cavalier King Charles spaniels (HR 2.78; 95%CI: 1.07-3.32) had a worse prognosis than crossbred dogs.
- Dogs 20kg or more had a worse prognosis than those weighing less than 20kg (HR 2.81; 95%CI: 1.72-4.59).

Hazard ratios larger than 1 mean that dogs with this factor have a **worse prognosis** compared with the baseline group.

*Image courtesy of Diane Pearce Collection / The Kennel Club ©

Clinical scoring in dogs with DMVD

An exciting RVC study found that routinely obtained clinical findings e.g. heart murmur grade, were predictive of outcome in dogs with DMVD attending a research clinic. The VetCompass prospective study provides an ideal population in which to validate these promising results. Please continue to support our research and make a difference to the future of canine cardiac care.

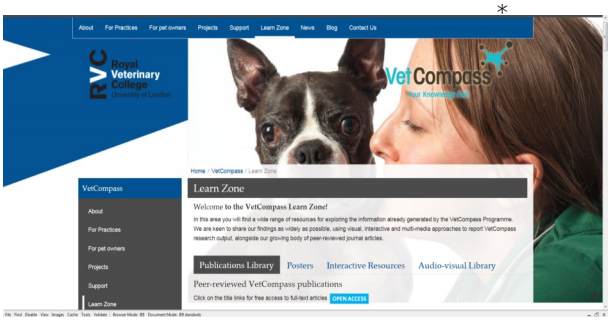
Clinical Severity Score System in Dogs with Degenerative Mitral Valve Disease. *Journal of Veterinary Internal Medicine*

Study design: Cohort study. 244 dogs with DMVD were recruited from primary-care practice to attend a research clinic. The dogs were followed over time to see whether routine clinical measurements were predictive of death due to cardiac disease.

Main outcomes:

- Seven risk factors were independently associated with death due to cardiac disease:
  - ⇒ History of cough, exercise intolerance, dyspnoea, syncope and decreased appetite
  - ⇒ Physical examination finding of heart murmur intensity louder than III/VI and absence of respiratory sinus arrhythmia
- A scoring system based on these results classified dogs into severity groups, which had different median survival times (MST) until cardiac related death:
  - ⇒ Low risk (1 or 2 risk factors), MST approx. 66 months
  - ⇒ Intermediate (3 or 4 risk factors), MST approx. 34 months
  - ⇒ High risk (5 or more risk factors), MST approx. 6 months

For more information...



Full text VetCompass papers are available for all to view from the Learn Zone section of our website:

OPEN ACCESS

www.rvc.ac.uk/vetcompass/learn-zone

The Journal of Veterinary Internal Medicine is now fully open access, so anyone can view articles published in this journal, without the need for a subscription.

If you have any trouble accessing the papers, please contact Maddy Mattin: mmattin@rvc.ac.uk

MATTIN, M. J., BOSWOOD, A., CHURCH, D. B., LOPEZ-ALVAREZ, J., MCGREEVY, P. D., O'NEILL, D. G., THOMSON, P. C. & BRODBELT, D. C. 2015. Prevalence of and risk factors for degenerative mitral valve disease in dogs attending primary-care veterinary practices in England. *Journal of Veterinary Internal Medicine,* 29**,** 847-54.

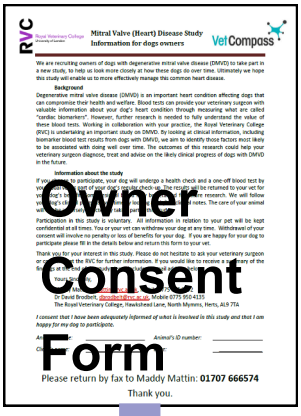
MATTIN, M. J., BOSWOOD, A., CHURCH, D. B., MCGREEVY, P. D., O'NEILL, D. G., THOMSON, P. C. & BRODBELT, D. C. 2015. Degenerative mitral valve disease: Survival of dogs attending primary-care practice in England. *Preventative Veterinary Medicine*.

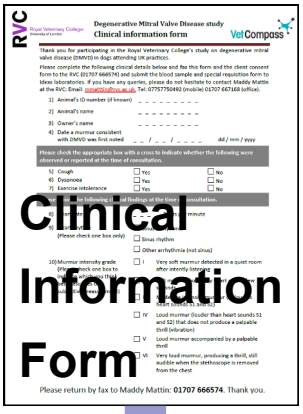
LOPEZ-ALVAREZ, J., ELLIOTT, J., PFEIFFER, D., CHANG, Y. M., MATTIN, M., MOONARMART, W., HEZZELL, M. J. & BOSWOOD, A. 2015. Clinical severity score system in dogs with degenerative mitral valve disease. *Journal of Veterinary Internal Medicine,* 29**,** 575-81

How to enrol a dog into the prospective study

1. Please obtain **owner consent** using the form provided.
2. Take a 2ml **blood sample** and place it into an EDTA tube. Centrifuge the sample and place the separated plasma into a plain tube labelled with the patient's details & BNPE CANINE.
3. Please complete a **clinical information** form.
4. Fax the consent and clinical information forms to the RVC and submit the blood tube and submission form to IDEXX.
5. Ask the client to record their dog's **sleeping respiratory rate** and subsequently record this in your clinical notes.

Please ask the client to record their dog's respiratory rate when the dog appears to be sleeping deeply (no paddling or twitching) in the home environment, when it is not too hot or cold.





2ml whole blood
→ **EDTA tube**
→ **plasma**
→ **plain tube**

Please fax to the RVC (01707 666574)

Please send to IDEXX, Wetherby

Inclusion criteria

Last chance to Enrol more DMVD cases!

Recruitment will be coming to an end on 31/12/15

Any dog with DMVD attending primary-care veterinary practice is eligible for inclusion into the study. This includes:

- Both pre-existing and newly diagnosed DMVD cases.
- Dogs with any stage of the disease, from those with asymptomatic murmurs to dogs with CHF.
- Dogs diagnosed with DMVD based on strong clinical suspicion alone (left apical systolic heart murmur and signalment). Confirmation by echo is not required.

Contact us!

By post:

Maddy Mattin & Dave Brodbelt,
Royal Veterinary College,
Hawkshead Lane,
Hatfield,
Hertfordshire
AL9 7TA

By e-mail:

mmattin@rvc.ac.uk
dbrodbelt@rvc.ac.uk

By phone:

07757750492 / 07759504135

Website: **www.rvc.ac.uk/VetCompass/projects**