Clinical Decision Making

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BestBETs for Vets

BestBETs for Vets are generated by the Centre for Evidence-based Veterinary Medicine at the University of Nottingham to help answer specific questions and assist in clinical decision making. Although evidence is often limited, they aim to find, present and draw conclusions from the best available evidence, using a standardised framework. A more detailed description of how BestBETs for Vets are produced was published in Veterinary Record earlier this year (VR, April 4, 2015, vol 176, pp 354-356).

Benazepril in dogs with asymptomatic mitral valve disease

Clinical scenario
Sally is a five-year-old springer spaniel cross who presented with a draining sinus in her left foot. You suspect a grass seed and advise that Sally is anaesthetised so you can explore the sinus. On clinical examination, you detect a grade II heart murmur, but there is nothing in her history to suggest cardiac disease. You advise echocardiography before anaesthesia, which reveals mitral valve disease with no chamber enlargement but significant mitral regurgitation. You go ahead with the surgery and successfully remove a large grass seed from the sinus in Sally’s left foot. When the owners collect Sally, they ask if she needs any medication for her heart. You wonder if Sally would benefit from being on benazepril.

The question
In [dogs with asymptomatic mitral valve disease] does [benazepril compared to no treatment] [improve the survival time of affected dogs]?

Search strategy
The search strategy can be viewed at http://bestbetsforvets.org/bet153, it is also available as a supplement to this article on Veterinary Record’s website at http://veterinaryrecord.bmj.com/content/177/15/392

Search outcome
- 56 papers found in Medline search
- 55 papers excluded as they did not meet the question
- One total relevant paper from Medline
- 44 papers found in CAB search
- 43 papers excluded as they did not meet the question
- One total relevant paper from CAB
- One relevant paper from both Medline and CAB Abstracts.

Search last performed
September 21, 2015.

Summary of evidence
Paper 1: Effect of benazepril on survival and cardiac events in dogs with asymptomatic mitral valve disease: A retrospective study of 141 cases (Pouchelon and others 2008).
Patient group: Dogs attending the cardiology unit of Alfort.
Study type: Cohort study.
Outcomes: Cardiac measurements to determine disease status; survival time; time to cardiac or non-cardiac death; and time to onset of congestive heart failure were measured.
Key results: For all causes of death, dogs in the benazepril (BNZ) group lived longer than those in the control group. However, for the Cavalier King Charles-King Charles (CKC-KC) breeds, no difference was seen between dogs in the treated and untreated groups. For cardiac death, dogs (excluding CKC-KC) in the BNZ group lived longer (no difference across whole cohort). For development of congestive heart failure, or generic ‘cardiac events’, there was no difference overall between treated and untreated dogs (and between treated and untreated CKC-KC groups). For other breeds, time to ‘cardiac event’ was longer in the BNZ group than the untreated group.
Study weaknesses: There was confusion between what each author was concentrating on; that is, whole population analysis or subgroup analysis with different breeds, and no sample size calculation was performed. It was unclear how long the population was followed for. The term ‘cardiac event’ related to both time to onset of heart failure and time to onset of sudden death. Only a small number of dogs died from a cardiac cause, so the conclusions drawn from this study were difficult to quantify. The CKC breed was overrepresented, so it was difficult to extrapolate the results to other breeds. There was a greater number of dogs with more severe and moderate mitral valve regurgitation in the treated than in the untreated group. Whether postmortems were done to determine definitive cause of death was not reported. Dogs with pulmonary arterial hypertension were included in the study.


Comments
There are several questionable points in this study. There was a series of letters published in the Journal of Veterinary Internal Medicine about this paper, which bring up some valid points about the weaknesses of the study.

Bottom line
There is insufficient evidence to suggest that dogs with asymptomatic mitral valve disease treated with benazepril will live longer.

Authors of this Best BET for Vets
Marnie Brennan and Jenny Stavisky, CEVM, University of Nottingham.

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