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QUEST: Managing Heart Failure In Dogs

The QUEST trial is the largest global clinical study of its kind ever to be conducted amongst dogs with congestive heart failure. QUEST stands for **Quality of Life and Extension of Survival Time**, and was an international, multi-centre clinical trial comparing two treatments used to combat congestive heart failure in dogs.

Overview

- Comparison of pimobendan (Vetmedin®) and an ACE-inhibitor treatment (benazepril hydrochloride) in dogs with myxomatous mitral valve disease (MMVD)
- 260 dogs enrolled across 11 countries
- Three year clinical phase

Study Aims

- **Primary:** To assess the effect of pimobendan therapy on survival time, in comparison with benazepril hydrochloride, in dogs with congestive heart failure due to MMVD
- **Secondary:** To assess the effect of pimobendan on quality of life in dogs with congestive heart failure due to MMVD



Patient Inclusion Criteria

- MMVD, confirmed by ultrasound of the heart chambers and valves
- Pulmonary oedema (fluid build-up in the lungs) confirmed by radiography (X-ray)
- Clinical signs of heart failure
- Animals aged 5 years or older
- Animals with body weight of 5- 20kg

Patient Exclusion Criteria

- Other significant conditions, e.g. heart, kidney, liver, stomach or intestinal disease
- Pregnant or lactating female dogs

Trial Design

QUEST was a randomised, positive-controlled, multi-centre trial conducted at 28 sites across Australia, Canada and Europe. The clinical phase of the trial ran for three years. After recruitment, patients were randomly allocated to either a pimobendan or benazepril hydrochloride treatment group, each group consisting of 130 dogs. The trial followed dogs to death, euthanasia or treatment failure leading to withdrawal from the trial.

Dosing Schedule

The pimobendan treatment group received a daily dose of 0.4-0.6mg/kg, using a suitable number of 1.25mg or 2.5mg capsules depending on weight, which were administered twice daily. The benazepril hydrochloride group received 0.25-0.5mg/kg daily, adjusted to a suitable number of 5mg tablets, according to the manufacturer's recommendation – this dose could be doubled at the request of the Investigator. The UK datasheets for both medicines can be downloaded from www.noah.co.uk/Compendium/Overview/

All dogs in the study received furosemide as required.



Measurement Of Treatment Effects

Quality of life observations

- Appetite
- Demeanour
- Exercise tolerance

Clinical considerations

- Respiratory: respiratory effort, coughing, shortness of breath or coughing at night
- Circulatory: heart rate, heart failure score, electrocardiography and ultrasound measures
- Clinical chemistry and haematology

Results

The first round of results from the QUEST study have been published in the September/October 2008 issue of the peer-reviewed *Journal of Veterinary Internal Medicine*.

The investigators found that:

- When considering the total study population, the median survival* time for "all dogs" was **188 days**†
- The median survival* of dogs receiving pimobendan was **267 days**, compared to **140 days** for those receiving benazepril hydrochloride*
- Survival* was **extended by 91%** in dogs receiving pimobendan compared with those receiving benazepril*.

* Survival was defined as the composite endpoint of cardiac death, euthanasia due to heart failure or treatment failure

† Häggström J et al. Effect of pimobendan or benazepril hydrochloride on survival times in dogs with congestive heart failure caused by naturally occurring myxomatous mitral valve disease: the QUEST study. *J Vet Intern Med*; Vol 22:5, 2008



The investigators conclude that:

“The study offers the most compelling evidence to date demonstrating the beneficial effect of pimobendan when compared to benazepril for extending survival in dogs with CHF due to MMVD when used in conjunction with other standard therapy”[†]

For further information on the QUEST study and its findings,
please visit www.questtrial.com