Occurrence of Hypertrophic Cardiomyopathy in a Large Cohort of British Shorthair Cats
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Index of Abstracts

### ORAL PRESENTATIONS – Thursday, June 10

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*Boldface type indicates ACVIM Resident Research Award eligibility. Presentation times are subject to change.*
3:00 pm  170  Alexandra Rosé  Causes, Usefulness of Clinical Investigations and Success of Antiemetic Therapy in Dogs Referred for Vomiting

3:15 pm  171  Fiona Tam  Safety and Palatability of Polyethylene Glycol 3350 as an Oral Laxative in Cats

3:30 pm  172  Lucie Goodwin  Evaluation of Hypercoagulability Using Thromboelastography (TEG) in Dogs With Protein Losing Enteropathy

3:45 pm  173  Dottie Laflamme  Comparison of Two Canned Diets Designed for the Management of Feline Diarrhea

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4:30 pm  174  Susanne Kilipinen  Determination of the Dosage Regimen of Tylosin in the Treatment of Canine Tylosin-Responsive Diarrhea

4:45 pm  175  Aarti Kathrani  CD11c Positive Dendritic Cells are Significantly Decreased in the Duodenum of Dogs With Inflammatory Bowel Disease

5:00 pm  176  Aarti Kathrani  Overdominant Single Nucleotide Polymorphisms in the Nucleotide Oligomerisation Domain Two (NOD2) Gene are Significantly Associated With Canine Inflammatory Bowel Disease

5:15 pm  177  Jan Suchodolski  Relationship of Mucosal Gene Expression to Microbiota Composition in Dogs With Inflammatory Bowel Disease

5:30 pm  178  Nashwa Waly  Measurement of IL-12 (p40, p35), IL-23p19 and IFN-gamma; mRNA in Duodenal Biopsies of Cats With Inflammatory Bowel Disease and Healthy Controls using Quantitative Reverse Transcriptase Polymerase Chain Reaction (qRT-PCR)

5:45 pm  179  Melanie Craven  Mucosal Cytokine Profiling Reveals IL-6 Up-Regulation in Feline IBD and Alimentary Lymphoma

6:00 pm  180  Jevan Christie  Fecal Sensitivity as a Tool to Differentiate Between Non-Neoplastic and Neoplastic Spirocerca Lupi Nodules Using a Modified Centrifugal Flotation Method

POSTER PRESENTATIONS

On Display:  Thursday, June 10, 9:30 am - 4:30 pm; Friday, June 11, 9:30 am – 4:30 pm; Saturday, June 12, 9:30 am – 2:30 pm

Attended by Authors Eligible for ACVIM Resident Research Awards:  Thursday, June 10, 9:50 am – 10:30 am; Friday, June 11, 9:50 am – 10:30 am

Attended by ALL Authors – Wine & Cheese Reception:  Friday, June 11, 6:00 pm – 7:30 pm

#  Presenting Author  Abstract Title

SMALL ANIMAL – CARDIOLOGY

181  Maria Helena Larsson  Time-Domain Signal-Averaged Electrocardiogram in Healthy German Shepherd and Boxer Dogs

182  Maria Helena Larsson  Time Domain High-Resolution Electrocardiography in Boxer Dogs With Arrhythmogenic Right Ventricular Cardiomyopathy and Dilated Cardiomyopathy

183  Aparecido Camacho  Heart Rate Variability in Boxer Dogs With Arrhythmogenic Right Ventricular Cardiomyopathy

184  Denise Schwartz  Six Minute Walk Test Standardization for Dachshund, Poodle and Labrador Retriever Dogs

185  Aparecido Camacho  Effects of Treadmill Training Over Autonomic and Hemodynamic Functions in Healthy Dogs

186  Masashi Mizuno  Effects of Running on the Renin-Angiotensin-Aldosterone System in Dog

187  Sara Granström  Occurrence of Hypertrophic Cardiomyopathy in a Large Cohort of British Shorthair Cats

188  Aparecido Camacho  Clinical Characterization of Hypertensive Hypertrophic Cardiomyopathy in Dogs With Chronic Kidney Disease (CKD)

189  Aparecido Camacho  Heart Rate Variability in Dogs With Mitral Endocardiosis or Natural Morbid Obesity

190  Carley Saelinger  Comet-Tail Artificial in Normal Dogs and Dogs With Cardiogenic Pulmonary Edema

191  Takashi Ebisawa  Clinical Usefulness of Measuring Plasma Atrial Natriuretic Peptide Concentrations for Assessing the Severity in Dogs With Degenerative Mitral Valve Disease

192  Pierre Menaut  Circulating Natriuretic Peptides Concentrations in Hyperthyroid Cats

193  Caryn Reynolds  Weekly Variability of Plasma NT-proBNP Measurements in Cats With and Without Heart Disease

194  Aliya Magee  Use of Abciximab to Determine Platelet Reactivity in Healthy Cats

195  Carolina Carlos Sampedrano  Effects of High Versus Normal Salt Diets on Cardiovascular Variables in Healthy Aged Cats: A 6-Month Study

196  Takeshi Mizuno  Relationship Between Prognosis and Immune Response in Dogs After Mitral Annuloplasty

197  Shigeki Yamano  Endogenous Erythropoietin Levels and Iron Utilization in Dogs With Degenerative Mitral Disease

198  Yoko Fuji  Prevalence of Right to Left Shunt Due to Patent Foramen Ovale Concurrent with Pulmonary Stenosis in Dogs

199  Meg Sleeper  Dobutamine Stress Testing in Portuguese Water Dogs With Juvenile Dilated Cardiomyopathy

200  Sabine Riesen  Pharmacokinetics of Oral Ivabradine in Healthy Cats

201  Michael Katz  Thiamyll Anesthesia Reveals Predominant Role for the Central Mechanism of Respiratory Sinus Arrhythmia in the Dog

202  Lauren Calland  In-Hospital Electrocardiograph Versus 24-Hour Holter Monitor for Assessing Heart Rate in Dogs With Atrial Fibrillation

203  Ashley Saunders  Bradydysrhythmias Requiring Pacemaker Implantation in Chagas Positive Dogs

SMALL ANIMAL – ONCOLOGY

204  Kensuke Nakamura  Contrast-Enhanced Ultrasonography With Sonazoid® for Characterization of Focal Splenic Lesions

205  Silvia Lucas  Evaluation of Oxidant/Antioxidant Total Status and Erythrocyte Antioxidant Defense in Cats With Lymphoma

206  Elizabeth Lechner  Oxidative Stress in Dogs With Lymphoma Before and After Administration of Doxorubicin: A Pilot Study
hunds (476 ± 42 m; min = 400 m; max = 556 m; 95%CI 459–498). In conclusion, regardless of anatomical differences between Poodles and Dachshunds, they walk similar distances. Based on a previously obtained equation (Distance = 55.3 + 8.3 TC + 0.91 + 2.1 RH), predicted distances were overestimated for Labradors and Dachshunds, demonstrating that standardization is required for different breeds.

Regular physical activity has been widely used in human cardiovascular therapy, promoting better autonomic control, heart function, life quality and decreasing sudden death risks. In dogs, however, there is not a standardized guideline to be used. This research has the goal of evaluating the effects of standardized treadmill training over the autonomic and hemodynamic functions of healthy dogs.

Six dogs (4 Beagles; 2 mixed breed), with mean weight of 13.1 Kg, were enrolled in this study. Twenty-four hour time domain heart rate variability (HRV), and echocardiography were analyzed before and after four weeks, five days a week, 40 minutes a day training. The intensity of training was individually determined by a maximal heart rate (MHR), observed in a maximal progressive effort test. Gradually, the intensity of training was increased in 50% of MHR, in the first week, to 60%, 70% and 80% of MHR in the second, third and fourth weeks, respectively. The paired t-test was used to compared data before and after training. The improvement in functional capacity of the dogs was attested by a better performance on the hemodynamic aspect, training lead to increase diastolic function, life quality and decreasing sudden death risks. In dogs, vascular therapy, promoting better autonomic control, heart function and blood pressure significantly (P < 0.05) after running.

Familial hypertrophic cardiomyopathy (HCM) has previously been described in British Shorthair cats (BSH), but until now, no reports have been published on how prevalent the disease is within this breed. The aim of this study was to assess the occurrence of HCM in a large cohort of BSH and to evaluate the effect of gender, weight and age as potential risk factors to presence of the disease.

The study was conducted as a prospective study including all BSH presented at the Small Animal Hospital for HCM screening in the period of April 2006–August 2009. All cats were examined by the same two trained ultrasonographers using a Vivid 7 ultrasound system (GE Medical) with a 10 S phased array transducer (8–10 MHz). Measurements of the left ventricle were obtained by conventional 2D- and M-mode imaging of right parasternal long-axis and short-axis views. Diagnosis of HCM was based on an overall assessment of echocardiographic findings, but cats were classified as to have a concentric hypertrophy if the interventricular septum thickness (0.78 ± 0.12 cm to 0.91 ± 0.16 cm); p = 0.0294), decrease left atrial diameter (21.7 ± 46.7 mm; p = 0.0059), right ventricular systolic (115.3 ± 50.4 mm) to 181 ± 51.9 mm; p = 0.0118), amplitude of heart rate (188.5 ± 21.9 bpm to 200.3 ± 17.5 bpm; p = 0.0033), and by a higher percentage of respiratory sinus arrhythmia on a maximal progressive effort test (> 50% until 2 km/h before training and 8 km/h after training). On the hemodynamic aspect, training lead to increase diastolic interventricular septum thickness (0.78 ± 0.12 cm to 0.91 ± 0.16 cm; p = 0.0294), decrease left atrial diameter (2.37 ± 32.2 mm to 2.15 ± 0.19 cm; p = 0.0369), left ventricular end-diastolic (4.47 ± 0.80 to 3.82 ± 0.62; p = 0.0068), and end-systolic (2.37 ± 0.39 to 1.88 ± 0.40; p = 0.0104) wall stress indexes, suggesting preload and afterload reduction. Improvement of diastolic function was confirmed by mitral E/A waves (1.42 ± 0.19 to 1.83 ± 0.46; p = 0.0467). No differences (p > 0.05) were detected on systolic function (EF%, SF%, left and right ejection time, left pre-ejection time, ejection in- dex, and mean velocity of circumferential fibers shortening), left ventricular end-systolic and end-diastolic volume indexes, and on TDI index of myocardial performance. As observed in a human being, training results in better autonomic and hemodynamic control in healthy dogs. In a near future we expect that this therapeud modalities could be helpful for cardiovascular improvement in the canine species.

Exercise and stress are important factors in the development of congestive heart failure. The present study evaluates the influence of exercise upon circulatory function and the renin-angiotensin-aldosterone system (RAAS) in healthy dogs. A placebo or benazepril hydrochloride was administered to four dogs and then heart rate and blood pressure were measured every 5 minutes for 30 minutes. Plasma renin activity, angiotensin-converting enzyme (ACE), angiotensin II (Ang II), aldosterone, adrenaline, noradrenaline and urinary aldosterone were measured in the dogs before and after running on a treadmill at 7 km/h for 10 minutes. Benazepril halotestate significantly (P < 0.05) decreased ACE (0.9 ± 1.0 U/l) and aldosterone (21.1 ± 16.1 pg/ml) compared with the placebo (85.7 ± 15.1 U/l, 42.9 ± 29.8 pg/ml). Plasma renin activity, Ang II, aldosterone and adrenaline levels increased during exercise. Heart rate and blood pressure significantly (P < 0.05) increased with both placebo and benazepril hydrochloride during exercise and heart rate and blood pressure did not significantly differ between the two groups. These results suggest that the increase in heart rate and blood pressure during exercise is related to activation of the RAAS and that benazepril might modulate circulatory function and the RAAS during exercise.

Regular physical activity has been widely used in human cardiovascular therapy, promoting better autonomic control, heart function, life quality and decreasing sudden death risks. In dogs, however, there is not a standardized guideline to be used. This research has the goal of evaluating the effects of standardized treadmill training over the autonomic and hemodynamic functions of healthy dogs.