57 ECHOCARDIOGRAPHIC LEFT VENTRICULAR FREE WALL AND INTERVENTRICULAR SEPTAL THICKNESS IN CATS ONE YEAR AFTER TAURINE TREATMENT FOR DILATED CARDIOMYOPATHY. Paul D. Pion, Mark D. Kittleson, Laura A. DeLellis and Quinton R. Rogers. School of Veterinary Medicine, University of Calif., Davis, California.

Taurine deficiency is a major cause of dilated cardiomyopathy (DCM) in cats. Administration of taurine to these patients results in resolution of myocardial failure. It has been suggested that taurine administration to cats with DCM results in excessive thickening of the left ventricular free wall (LVW) or interventricular septum (IVS). We serially evaluated echocardiographically determined left ventricular free wall and interventricular septal thickness in diastole and systole in 19 cats with DCM that were treated with taurine. 60+/-11 weeks after initiating taurine therapy, there was a statistically significant increase in the thickness of the LVW and IVS when measured in diastole and systole (P<0.01). LVW thickness in diastole increased from 2.9+/-0.82 to 3.8+/-1.0 mm (mean+/-sd). IVS thickness in diastole increased from 2.9+/-0.63 to 4.1+/-1.3 mm. A diastolic LVW or IVS thickness greater than 5 mm was found in only 2 cats during the study. One of these cats had normal LVW and IVS thickness 53 weeks after beginning taurine treatment. The other cat had a thickened LVW and IVS 35 and again 57 weeks after beginning taurine treatment. Neither cat exhibited any evidence of cardiac dysfunction associated with the increased wall thickness. Conclusion: Administering taurine to cats with DCM does not result in echocardiographically detectable abnormal hypertrophy of the LVW or IVS in a high percentage of cats, if at all.

58 FASTING CAUSES SIGNIFICANT REDUCTIONS IN PLASMA TAURINE CONCENTRATIONS. Paul D. Pion, Kathi Greene, Julia Lewis and Mark D. Kittleson. School of Veterinary Medicine, University of Calif., Davis, CA.

The purpose of this study was to evaluate the effect of eating and subsequent fasting on plasma and whole blood taurine concentration ([TAU]). Nine adult female cats fed a purified diet containing 1500 mg taurine/kg dry diet (+TAU, n=5) or 0 taurine (-TAU, n=4) for 20 months were acclimated to eating for 1 hour once per day at 8 A.M. Whole blood and plasma samples were obtained before (time 0) and 1, 2, 3, 5, 24 and 48 hours after a meal of +TAU or -TAU diet was fed to the respective groups. All samples were frozen for later taurine analysis. Eating a meal and subsequent fasting had a statistically significant (P=0.0012) effect upon plasma [TAU] in the +TAU group. In this group, mean +/- s.d. plasma [TAU] ranged between 87+/-44 and 25+/-8 nmoles/ml, 2 and 48 hours after the meal was fed respectively. No clinical or statistically significant change in [TAU] was observed in blood or plasma from the -TAU group or blood from the +TAU group over the study period. In the +TAU group, mean blood [TAU] ranged between 344+/-71 and 242+/-43 nmoles/ml. In the -TAU group, mean blood [TAU] ranged between 25+/-4 and 18+/-5 nmoles/ml. Conclusion: In a clinical situation, interpretation of 48 hour fasting plasma samples would have resulted in misinterpretation of the taurine status of 4 of the 5 +TAU cats. Whole blood provides a less labile and perhaps more reliable index of taurine status in cats.

59 DEFECTIVE ENDOGENOUS RETROVIRAL ELEMENTS IN A CANINE LYMPHOSARCOMA CELL LINE. R.A.Squires, N.T.Gorman, R.A.Padua* and D.E.Onions. School of Veterinary Science, University of Glasgow, Scotland. *University of Wales College of Medicine, Cardiff, Wales.

A canine lymphosarcoma (LSA) cell line has been reported to produce particles with properties characteristic of mammalian retroviruses. However, it has proved difficult to reproduce this result. To search for retroviral proviral elements in this cell line a bacteriophage Lambda genomic DNA library was made. The library was probed with a murine retrovirus (FMuLV) and hybridizing phage plaques were picked. DNA extracted from hybridizing phages was digested with restriction endonucleases and fragments were separated by agarose gel electrophoresis. Southern transfer and hybridization with FMuLV and baboon endogenous retrovirus (BaEV) revealed that 2 phage clones contained fragments which hybridized strongly with both FMuLV and BaEV. These fragments were subcloned into the plasmid vector "Bluescript" and sequenced by the dideoxy chain termination method.

DNA sequence analysis identified 2 distinct elements homologous with a variety of retroviruses.The larger fragment (2.5 kilobase pairs) contained 1.5kbp of a defective retroviral *pol* gene sharing 63% homology at the DNA level with AKV murine leukemia virus. The smaller fragment (0.45kb) consisted exclusively of retroviral *pol* gene almost identical to that in the large fragment, but with an additional 40bp deletion. Sequencing on either side of these fragments is continuing.

In summary, defective endogenous retroviral elements have been found in a canine LSA cell line. The elements differ in their defects but appear otherwise to be closely related. Because of their defects, these elements could not be responsible for the production of intact retroviruses as reported in this cell line. Further study is in progress to determine whether other endogenous elements capable of producing intact retroviruses are present in this cell line. It is of interest to determine the prevalence of retroviral elements in normal canine DNA and to investigate whether they are of etiological significance in canine diseases.

60 ENDOGENOUS RETROVIRAL ELEMENTS IN THE CANINE GENOME.

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Defective endogenous retroviral elements have recently been found in a canine lymphosarcoma (LSA) cell line and we have characterized these by DNA sequencing. This study was designed to determine if similar elements are present in naturally-occurring canine LSAs or in normal canine DNA. Two probes were prepared by sub-cloning sequences from the 5' and 3' ends of the canine endogenous retroviral *pol* gene. Probes were chosen from areas sharing at least 60% homology and complete colinearity with AKV murine leukemia virus. High molecular weight genomic DNA was prepared from a variety of canine tissues: 12 samples were from LSA lymph nodes, 2 from lymphoblasts in cases of acute lymphoblastic leukemia and 7 from normal kidney. Genomic DNA was digested with restriction endonucleases and fragments were separated by agarose gel electrophoresis. Southern transfer and hybridization under stringent conditions with the canine retroviral probes revealed numerous retroviral bands. The pattern of bands was identical for all tissues examined. Similar treatment of DNA from the original LSA cell line from which the probes were derived produced an identical pattern of bands.

In summary, canine DNA has been shown to contain multiple copies of endogenous retroviral elements. No difference in the pattern of proviral bands has been observed between normal and LSA tissues, so no etiological significance can yet be ascribed to these elements. Further studies are in progress to determine whether any of these elements express themselves at the RNA or protein level.