Oral presentations

cat aversion and therefore increase the likelihood of transmission from intermediate to definitive host. Similar behaviour changes have also been demonstrated within the human population, with changes in personality profiles and reaction times in infected individuals. Latent toxoplasmosis in the domestic cat is, however, generally considered to be asymptomatic, with clinical signs, including neurological, only rarely reported.

With the most frequent cause of domestic feline mortality in the UK being attributed to trauma (12.2%) and with 60% of those involving road traffic accidents, this study aimed to investigate a possible link between *T. gondii* infection in cats and an increased risk of involvement in traumatic accidents; specifically, road traffic accidents. The hypothesis being that cats that have been involved in a road traffic incident will be more likely to be seropositive for *T. gondii* antibodies, when compared to a control population of cats, which have not been associated with such trauma.

METHODS

Residual blood samples were collected into plain brown serum gel tubes from two groups of felines: one group of which had been involved in a road accident (N=13) and the other being geographically matched controls (N=10). *Toxoplasma gondii* IgM and IgG antibody titres were detected using indirect immunofluorescence (IIFT). These groups were compared using the non-parametric Fisher's exact test.

A *T. gondii* UK seroprevalence in domestic cats 'heat map' was also generated from data (N=1344) obtained from UK commercial laboratories.

RESULTS

There were no significant differences observed between these two groups in relation to seropositivity status ($p=1.0$). The prevalence 'heat map' indicated that seroprevalence may vary within the UK, confirming the need for geographically matched controls.

CONCLUSION

The study did not find a significant association between *T. gondii* infection and road accidents in cats. This study's major weakness to date was the low sample number, which made obtaining a significant, reliable answer to the stated hypothesis difficult. The study is ongoing and continues to collect samples in the hope that in the near future the study can be repeated with a larger cohort; therefore, this can be seen as an intermediate result.

ACKNOWLEDGEMENTS

Thanks to Petsavers and The Morris Animal Foundation for their funding. Also to Biobest and IDEXX laboratories for the serology data.

Urine as a potential source of biomarkers of canine spinal cord injury: challenges of biomarker discovery

**Celine S.L. Toh¹, T. James Anderson¹,
Intan N.F. Shafie², Rodrigo Gutierrez-
Quintana¹, Mark McLaughlin¹**

¹ School of Veterinary Medicine, University of Glasgow, Glasgow, UK
² Faculty of Veterinary Medicine, Universiti Putra Malaysia, Selangor, Malaysia

Urine is a source of potential biomarkers for various diseases but there is currently no consensus on how canine urine should be processed for proteomic analysis. This study investigated the effect of boric acid and centrifugation on urinary proteins. These steps are commonly recommended for urinary proteomic analysis, since boric acid inhibits bacterial growth in stored urine, while centrifugation helps to minimize cellular contamination of urine. The method employed to assay protein content is another consideration since agents present in urine may interfere with the reaction and generate erroneous values. This study therefore also compared the use of the bicinchoninic acid (BCA) assay and the Bradford assay to quantify urinary proteins. Random spot urine

samples were collected from a control group (consisting of clinically healthy dogs and dogs with a variety of non-neurological conditions), and a group of dogs with spinal cord injury (SCI). On visual inspection, the intensities of protein bands visible on Coomassie blue-stained acrylamide gels were unaffected by centrifugation in the majority of samples analysed. However, samples positive for blood contamination (detected on dipstick) displayed a few unique bands and these bands were markedly reduced in intensity following centrifugation. Boric acid had no significant effect on the overall protein profile however in 8 out of 24 samples, a protein band visible between 50-75kDa decreased in intensity. The BCA and Bradford assays were used to calculate the volume required to give equal amounts of protein across all samples that were loaded onto the gel. Comparison of control and SCI samples showed that a number of SCI samples had a higher protein content compared to control samples on the gel based on the BCA assay values but displayed a comparable profile on the gel using the Bradford assay values. In conclusion, boric acid and centrifugation can influence the level of specific proteins. Centrifugation is recommended for blood-contaminated samples in order to obtain an accurate assessment of the urinary proteome. The BCA and Bradford protein assays provide largely comparable results, however the BCA assay might be more susceptible to interfering substances in urine. Optimising the protocols for sample preparation and protein measurements are essential for validation of potential urinary biomarkers of disease.

Delivered by BSAVA to:

Guest (guest)

IP: 54.80.97.219

On: Wed, 26 Apr 2023 10:55:09