Oral presentations

than AUC of BL21 *E.coli* co-incubated with phosphate buffered saline (control). Statistical comparisons were made using the Student's t-test. UEV preparations were immunoblotted for TSG101 (canonical UEV marker) and uromodulin, and quantified by densitometry.

RESULTS

Samples were collected from 13 dogs (8 males, 5 females). UEVs from eleven dogs were classified as bactericidal (7 males and 4 females) and two as non-bactericidal. Uromodulin content of UEV preparations was not different between those with and without

bactericidal activity. Furthermore, UEV preparations that were non-bactericidal did not contain fewer UEVs (based on TSG101 densitometry) compared to bactericidal preparations, which could indicate bactericidal dysfunction of UEVs within these individuals.

STATEMENT (CONCLUSIONS)

Canine UEV preparations from most dogs demonstrated *in vitro* bactericidal activity, therefore UEVs may also be innate immune effectors of the urinary tract in dogs. However, further work to exclude a bacteriostatic effect of canine uromodulin is warranted.

Developing methods to study the endothelial glycocalyx in cats

Sara Hillyer¹, Chris Neal², Rebecca Foster², Angie Hibbert³, Severine Tasker^{1,3,4}, Gavin Welsh², Simon Satchell², Natalie Finch²

- 1 Bristol Veterinary School, University of Bristol, Bristol, United Kingdom
- 2 Bristol Renal, University of Bristol, Bristol, United Kingdom
- 3 The Feline Centre, Langford Vets, University of Bristol, Bristol, United Kingdom
- 4 The Linnaeus Group, Shirley, United Kingdom

OBJECTIVES

The study objectives were: to visualise the endothelial glycocalyx for the first time in cats; to validate assays to quantify serum glycocalyx breakdown products (sulphated glycosaminoglycans [sGAG] and hyaluronan [HA]) in cats; and to compare serum glycocalyx breakdown products in healthy cats with those with hyperthyroidism and chronic kidney disease (CKD).

METHODS

Uterine artery samples from healthy cats undergoing routine neutering were perfused with 0.1% Alcian

blue/2.5% glutaraldehyde/0.1M sodium cacodylate and fixed with 2.5% glutaraldehyde/0.1M sodium cacodylate, then visualised using transmission electron microscopy. Validation of an Alcian blue assay and commercially available ELISA were performed for measurement of sGAG and HA, respectively, in cat sera. Serum HA was measured in cats with hyperthyroidism (n = 9), CKD (n = 6) and in healthy cats (n = 9) and compared across groups by Kruskal-Wallis testing.

RESULTS

Median (range) glycocalyx depth in uterine artery was 64.44 (37.28–119.34)nm. Non-specific binding in serum, particularly to albumin, prevented reliable measurement of sGAG with the Alcian blue assay. The HA ELISA was reliable. Median (range) HA in cats with hyperthyroidism, CKD and in healthy cats was 118.40 (50.11–636.88)ng/ul, 155.06 (41.17–517.00)ng/ul and 184.74 (62.92–532.36) ng/ul, respectively, with no significant difference across groups (P = 0.778).

STATEMENT (CONCLUSIONS)

Definitive glycocalyx visualisation will facilitate its future study *ex vivo*. The HA ELISA enabled measurement of serum HA as a glycocalyx breakdown product in cats but HA was not significantly different across healthy cats and those with hyperthyroidism or CKD. However, this study was likely underpowered and larger studies are needed to evaluate glycocalyx breakdown in these diseases.