Response to furosemide in anuric and oliguric acute kidney injury is not associated with survival in dogs and cats

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OBJECTIVES

To evaluate the association between response to furosemide administration and survival in cats and dogs with acute kidney injury (AKI).

METHODS

Cats and dogs with a clinical diagnosis of anuric (0ml/kg/hr) or oliguric (<1ml/kg/hr) AKI hospitalised at a university teaching hospital and treated with intravenous furosemide between May 2011 and September 2016 were retrospectively identified and included in the study. A positive response to furosemide was defined as conversion from anuric or oliguric status to normal urine production (>1ml/kg/hr) or a doubling of urine output. An association between the following categorical variables was evaluated using Fishers exact test: - response to furosemide and survival to discharge.

RESULTS

Four cats and eight dogs were included in the study. Five animals (42%), of which three were cats, were anuric at presentation. Seven animals (58%), of which one was a cat, were oliguric at presentation. Furosemide was administered at a median (range) dose of 2 (1–4) mg/kg. Five animals (42%), of which two were cats, responded to furosemide. Of the animals that responded to furosemide four were oliguric and one was anuric at presentation. One dog and one cat survived to discharge. There was no significant association between response to furosemide and survival ($P=0.152$).

STATEMENT

Furosemide is commonly used in management of oliguric and anuric AKI in cats and dogs. In this study, response to furosemide administration was not associated with survival to discharge, however, the small number of animals included, limited the study.

Evaluation of urinary biomarkers to investigate contrast induced nephropathy in dogs with normal renal function undergoing computed tomography (CT) angiography

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OBJECTIVES

To investigate renal injury following administration of an intravenous non-ionic contrast agent in dogs with normal renal function undergoing computed tomography (CT) using a panel of urinary biomarkers (neutrophil gelatinase associated ligand; NGAL, kidney injury marker-1; KIM-1, clusterin, cystatin C, osteopontin, monocyte chemoattractant protein-1; MCP-1).

METHODS

Dogs presenting to a university teaching hospital and undergoing CT for diagnostic purposes were prospectively enrolled between August and December 2015. Dogs with urinary tract disease or renal dysfunction were excluded. Free catch urine samples were collected at admission, 6–12hrs and 12–24hrs post-CT. Urinary biomarkers were analysed using a commercially available canine specific assay. Results were normalised to urinary creatinine. Change in biomarkers over time was evaluated using Friedman's ANOVA and post-hoc testing was performed using the Wilcoxon signed rank test with a Bonferroni correction.

RESULTS

Thirty dogs were included in the study of which 25 received contrast agent. In the dogs administered contrast, the following biomarkers significantly changed

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