



Animal Health Review publications bring summaries of the most relevant papers from global veterinary journals to your inbox every issue with commentary from New Zealand experts.

Areas covered include dairy, sheep and beef, and companion animal. Specialist opinions are provided on guidelines, medicines, surgical techniques and papers presented at conferences. Each publication focuses on local clinical significance of the research and all Animal Health Review publications are free to receive.

Animal Health Review makes keeping up to date easy whether you're a veterinarian, specialist veterinarian, a veterinary nurse, or are in a related field. We have selected three article reviews on topics which we see regularly as nurses in practice.

Glomerular filtration rate, urine production, and fractional clearance of electrolytes in acute kidney injury in dogs and their association with survival

Companion Animal Research Review Issue 1 with Nick Cave

Authors: Brown, N. et al.

Summary: In a prospective study, the changes observed in conventional indices of renal function were recorded to define the course of acute kidney injury (AKI; n = 10 dogs) and to identify recovery markers. Six dogs did not survive. Glomerular filtration rate (GFR) did not differ between surviving and non-surviving dogs, but did increase over time in surviving but not non-surviving dogs ($p = 0.03$). The fractional clearance of sodium decreased over time from 20% to 9.4% ($p < 0.0001$) in the surviving but not the non-surviving dogs. The excretion ratio and fractional clearance of solutes were highly correlated ($r = 0.70-0.95$).

Comment: Survival following AKI in dogs is less than 50% in most studies, though it is unclear what the best prognostic marker on presentation is. In most studies, urine output is the parameter most

consistently associated with survival. This study included 10 oligo-anuric AKI dogs, which are already known to have a poorer prognosis than polyuric dogs. In this study there was no difference at presentation in any of the reported parameters, including serum creatinine, between survivors and non-survivors. Survival was associated with a rise in urine output, a decrease in serum creatinine, an increase in GFR and a decrease in fractional sodium clearance (FCNa). Thus, the response to appropriate therapy and not baseline characteristics are most important, and therefore management is worth considering in most cases. This study did not determine if calculating the FCNa or GFR out-performs monitoring urine output and creatinine. Until we learn otherwise, accurate monitoring of urine output remains paramount in all cases of AKI.

Reference: J Vet Intern Med. 2015;29(1):28-34

<http://www.animalhealthreview.co.nz/an/animal-health-area/Companion-Animal/Companion-Animal/Companion-Animal-Research-Review-Issue-1.aspx>