

Andrew Quartin
Roland Schein
Cynthia Cely

Accuracy of plasma neutrophil gelatinase-associated lipocalin in the early diagnosis of contrast-induced acute kidney injury in critical illness

Accepted: 17 June 2013
Published online: 28 June 2013
© Springer-Verlag Berlin Heidelberg and ESICM 2013

Dear Editor,

We read with interest the recent article by Valette et al. [1] evaluating the sensitivity of plasma neutrophil gelatinase-associated lipocalin (pNGAL) for detection of contrast-induced acute kidney injury (CI-AKI). The authors conclude that CI-AKI is common among critically ill patients, but that pNGAL is selectively blind to this type of renal injury.

Valette et al., did observe that pNGAL was sensitive for AKI, irrespective of etiology but only if present before imaging. Perhaps this was due to the extremely sensitive threshold, in accord with the Acute Kidney Injury Network (AKIN) definition, used to define CI-AKI, rather than a shortcoming of pNGAL as a biomarker. Indeed, 25 of the 30 CI-

AKI patients were identified as such without as much as a 0.3 mg/dL rise in serum creatinine over 72 h, but rather on the basis of transient oliguria. Whether such minimal fluctuations in renal function should be considered as injury remains to be delineated.

Just as importantly, the modest changes in renal function Valette observed may have had little to do with contrast exposure. Most studies of CI-AKI have involved coronary angiography patients, and somewhat arbitrarily attributed any nephrotoxicity to the iodinated radiocontrast material rather than other potential hazards of the procedure and associated management (such as atheroemboli, angiotensin axis medications, diuresis, etc.). Declining renal function after contrast-enhanced computed tomographic (CT) scanning is a common finding among the critically ill, and has similarly been attributed to the contrast media [2]. However, the only two studies employing unexposed critically ill populations as controls found the attributable risk associated with iodinated contrast to be unmeasurably low [3, 4], despite also frequently observing worsened renal function following CT scanning. In Valette's study, 82 of 96 patients were exposed to iodinated radiocontrast material in the course of CT scanning rather than invasive angiography. A low rate of CI-AKI would therefore be anticipated.

We believe that Valette's data better support an alternative interpretation: CI-AKI rarely if ever occurred in their study population, leaving pNGAL with little to detect.

Conflicts of interest The authors declare no conflict of interest.

References

1. Valette X, Savary B, Nowoczyn M, Daubin C, Pottier V, Terzi N, Seguin A, Fradin S, Charbonneau P, Hanouz JL, du Cheyron D (2013) Accuracy of plasma neutrophil gelatinase-associated lipocalin in the early diagnosis of contrast-induced acute kidney injury in critical illness. *Intens Care Med* 39:857–865
2. Hoste EA, Doom S, De Waele J, Delrue LJ, Defreyne L, Benoit DD, Decruyenaere J (2012) Epidemiology of contrast-associated acute kidney injury in ICU patients: a retrospective cohort analysis. *Intens Care Med* 37:1921–1931
3. Cely CM, Schein RM, Quartin AA (2012) Risk of contrast induced nephropathy in the critically ill: a prospective, case matched study. *Crit Care* 16:R67
4. Ehrmann S, Badin J, Savath L, Pajot O, Garot D, Pham T, Capdevila X, Perrotin D, Lakhil K (2013) Acute kidney injury in the critically ill: is iodinated contrast medium really harmful? *Crit Care Med* 41:1017–1026

A. Quartin (✉) · R. Schein · C. Cely
University of Miami Miller School of
Medicine, Miami, Florida, USA
e-mail: aquartin@med.miami.edu