

ACUTE KIDNEY INJURY

uNGAL—a marker of moderate utility in critically ill adults

Reliance on changes in serum creatinine level as a marker of acute kidney injury (AKI) can delay interventions that might improve outcomes in affected patients. Urine neutrophil gelatinase-associated lipocalin (uNGAL) has emerged as a very promising marker of AKI in a number of clearly defined clinical contexts. Edward Siew and colleagues have found that although a single uNGAL measurement in a heterogeneous population of critically ill adults is independently associated with AKI development, this parameter does not substantially add to the performance of a collection of other clinical predictors.

The researchers analyzed data from participants of the ongoing VALID study, a single-center, prospective trial of critically ill adult patients treated in multiple intensive care units. AKI was

defined as $\geq 50\%$ or $\geq 26.5 \mu\text{mol/l}$ increase in serum creatinine from the value measured closest to enrollment. Levels of uNGAL were measured the morning of patient enrollment. Median corrected uNGAL levels were 247 ng/mg in 52 patients who within 48 h of enrollment developed AKI that persisted for another 24 h, and 70 ng/mg in the 251 participants who did not develop AKI in these first 72 h. Median levels of uNGAL were also significantly higher in 83 patients who died within 28 days of enrollment than in the 407 who survived. The areas under the receiver operating characteristic curve (AUC–ROC) of uNGAL for predicting the occurrence of sustained AKI within 24 h and 48 h were, however, only 0.70 and 0.66, respectively. Moreover, the addition of uNGAL measurements to a multivariable clinical

model for AKI that included several other parameters (for example, age, intensive care unit facility and the presence of sepsis) and the modified APACHE II score, resulted in only a marginal

“...uNGAL [level] did not substantially add to the performance of a collection of other clinical predictors”

improvement in the AUC–ROC of the model from 0.81 to 0.82.

In patients in intensive care, as a stand-alone marker “uNGAL seems to have limited utility beyond a conventional clinical risk-prediction model,” Siew *et al.* conclude.

Baldo Lucchese

Original article Siew, E. D. *et al.* Urine neutrophil gelatinase-associated lipocalin moderately predicts acute kidney injury in critically ill adults. *J. Am. Soc. Nephrol.* **20**, 1823–1832 (2009).