Introduction and Aims: Few studies have investigated the predictive properties of urinary (u) NGAL as an AKI marker in a septic population. Objectives: This study aimed to evaluate the efficacy of urinary (u) NGAL as predictor of AKI and death in septic patients admitted to the clinical emergency room (ER).

Methods: We prospectively studied patients with sepsis admitted to the ER from University Hospital of Botucatu Medical School - UNESP from February 1, 2013 to May 31, 2014. Urine was analyzed for NGAL within the first 24 hours after admission (classified as NGAL1), between 24-48 h (NGAL2) and at moment of AKI diagnosis (NGAL3). Diagnostic characteristics of uNGAL in predicting AKI and mortality were assessed by calculation of the area under the receiver operating characteristic curve (AUC-ROC).

Results: Among 168 septic patients admitted to ER, 72% developed AKI. The uNGAL and its relationship with creatinine (Cr) were high in septic patients, but statistically higher in those with sepsis and AKI. The uNGAL 1 and 2, as well as uNGAL / uCr 1 and 2 were good predictors for AKI in septic patients admitted to ER (area under ROC 0.73, 0.70, 0.77 and 0.84 respectively). The uNGAL 1and uNGAL1/uCr1 were poor predictors for death of septic patients (area under ROC 0.66 and 0.68, respectively), whereas uNGAL2 and uNGAL2/uCr2 were very good predictor (area under ROC 0.70 and 0.81 respectively).

Conclusions: The results of this study show that the uNGAL is a highly sensitive, but nonspecific predictor of AKI and death in septic patients admitted in ER. Further validation of uNGAL as a biomarker of AKI and death in this population is warranted.

© The Author 2015. Published by Oxford University Press on behalf of ERA-EDTA. All rights reserved.