

# KSN 2016 Abstract Submission

## *Acute Kidney Injury*

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### Urinary Biomarker TIMP-2 Predicts adverse outcomes in patients with Acute Kidney Injury

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**Background:** Several recent studies have shown that insulin-like growth factor-binding protein 7 (IGFBP7) and tissue inhibitor of metalloproteinases-2 (TIMP2) is a promising biomarker for the early detection of acute kidney injury (AKI), but the role of IGFBP7 and TIMP2 in predicting adverse clinical outcomes has not been well addressed. The purpose of this study was to evaluate the usefulness of urine IGFBP7 and TIMP2 as outcome predictor in patients with AKI.

**Methods:** This was a prospective cohort study enrolling established AKI patients. Urinary biomarkers, including IGFBP7, TIMP2 and NGAL were determined on admission and discharge from hospital. The primary clinical outcome variables were renal replacement therapy (RRT), renal recovery and in-hospital mortality.

**Results:** Initial plasma creatinine concentrations and urinary biomarkers at AKI diagnosis were significantly higher in the RRT group than in the non-RRT group (Creatinine  $5.17 \pm 3.59$  vs  $2.98 \pm 1.60$  mg/dL; NGAL  $2035.44 \pm 2431.73$  vs  $880.54 \pm 1413.68$ ; IGFBP7  $47.67 \pm 46.44$  vs  $33.23 \pm 44.55$ ; TIMP2  $24.27 \pm 45.60$  vs  $9.58 \pm 14.48$  ng/mg creatinine,  $P < 0.05$ ). For predicting RRT requirement, increased plasma creatinine and TIMP2 was independently associated with greater odds of RRT in multiple logistic regression analysis. (odds ratio 1.77,  $P = 0.048$ ; 48.30,  $P = 0.04$ , respectively) However, plasma creatinine and urinary biomarkers did not show statistically significant difference and could not predict recovery and the death in this study.

**Conclusion:** This prospective observational study could suggest that Urinary TIMP2 might be served as a strong predictor for the need for the renal replacement therapy early in the course of AKI.

**Keywords:** acute kidney injury, IGFBP7, TIMP-2, Urinary Biomarker