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The cMet and HGF levels in plasma are a significant prognostic biomarker for severe acute kidney injury

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Objectives: Acute kidney injury (AKI) is a common clinical condition associated with serious adverse outcomes. Hepatocyte growth factor (HGF) and its receptor-cMet, activate biological pathways necessary for repair and regeneration following AKI. Here, we evaluated the clinical role of plasma HGF and soluble cMet as prognostic biomarkers in severe AKI requiring continuous renal replacement therapy (CRRT).

Methods: 136 severe-AKI patients participating in the VENUS (VolumE maNagement Underbody composition monitoring in critically ill patients on CRRT) trial between 2017 and 2019 were enrolled in this study. Enzyme-linked immunosorbent assay kit was used to measure the plasma concentration of HGF and soluble cMet at day 0, 2 and 7 (D0, D2, and D7, respectively). We investigated the association between the HGF or soluble cMet concentration with all-cause mortality.

Results: Patients were divided into were separated into three groups based on their HGF and cMet concentrations. D0 concentrations of HGF and cMet were positively correlated with each other (R2 = 0.126, P<0.03). The risk of all-cause mortality was increased in the severe-AKI patient group with the highest D0 HGF levels compared to the rest of the patients after adjusting for gender, BMI, APACHE II score and age-CCI (hazard ratio [HR] 1.711, P=0.041) by multivariate cox regression analysis. Also, the group with the highest D2, D7 HGF levels had significantly higher mortality than the lower-HGF groups after adjusting (**HR** 2.572, P=0.003; **HR** 4.261, P=0.002**.** respectively). D7 cMet levels were significantly associated with mortality (HR 1.261, P=0.341) but not D0 and D2 cMet levels. However, changes in HGF or cMet levels were not associated with mortality.

Conclusions: HGF and soluble cMet levels in plasma could predict outcomes in severe AKI patients undergoing CRRT.