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Validating a Lower Urine Output Criteria in Predicting Death in Critically Ill Patients

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Abstract

Introduction: Urine output provides a rapid estimate for kidney function, and its use has been incorporated in the diagnosis of acute kidney injury. However, not many studies had validated its use compared to the plasma creatinine. It has been showed that the ideal urine output threshold for prediction of death or the need for dialysis was 0.3 ml/kg/h. We aim to assess this threshold in our local ICU population. Methods: This was a secondary analysis of an observational study done in critically ill patients. Hourly urine output data was collected, and a moving average of 6-hourly urine output was calculated over the first 48 hours of ICU admission. AKI(uo) was defined if urine output \leq 0.5 ml/kg/h, and UO0.3 was defined as urine output \leq 0.3 ml/kg/h. Results: 143 patients were recruited into the study, of these, 87 (61%) had AKI(uo), and 52 (36%) had UO0.3. The AUC of AKI(uo) in predicting death was 0.62 (0.51 to 0.72), and UO0.3 was 0.66 (0.55 to 0.77). There was lower survival in patients with AKI(uo) and UO0.3 compared to those without ($p=$ 0.01, and 0.001, respectively). However, only UO0.3 but not AKIuo independently predicted death (HR 2.44 (1.15 to 5.18)). Conclusions: A threshold of 6 hourly urine output of 0.3 ml/kg/h but not 0.5 ml/kg/h independently predictive of death. This support previous finding of a lower threshold of urine output criteria for optimal prediction.


Keywords

Author Keywords: Urine Output; Intensive Care Unit; Acute Kidney Injury; Death; Dialysis


KeyWords Plus: ACUTE KIDNEY INJURY; ACUTE-RENAL-FAILURE; REPLACEMENT THERAPY; RIFLE CRITERIA; FLUID OVERLOAD; MORTALITY; OLIGURIA; RISK; CONSENSUS; CURVES

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