

Oral Communication Abstract

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Continuous renal replacement therapy for acute kidney injury in critically ill patients with cancer

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Objectives: The aim of this study is to find out the prognostic factors of 28-day mortality in patients with acute kidney injury (AKI) with solid or hematologic malignancies undergoing continuous renal replacement therapy (CRRT).

Methods: This study was conducted retrospectively for patients older than 18 years of age who were diagnosed with solid or hematologic malignancies before intensive care unit (ICU) admission. A total of 471 patients were enrolled between Jan. 2013~Dec. 2020.

Results: Of 471 cancer patients undergoing CRRT, 298 (63%) had solid malignancies and 173 (37%) had hematologic malignancies. The main reason of CRRT application to cancer patients was sustained oliguria (163 (54.7%) in solid malignancies and 83 (48.0%) in hematologic malignancies). The 28-day mortality rates were 58.8% (175/298) in solid malignancies and 82.0% (141/173) in hematologic malignancies ($P < 0.001$). In multivariate Cox analysis, body mass index (BMI) (hazard ratio [HR]: 0.958, 95% confidence interval [CI]: 0.934-0.982, $P = 0.001$), albumin (HR: 0.739, 95% CI: 0.548-0.998, $P = 0.048$), oliguria (HR: 1.808, 95% CI: 1.239-2.638, $P = 0.002$), metabolic acidosis (HR: 1.560, 95% CI: 1.085-2.244, $P = 0.016$), sequential organ failure assessment (SOFA) score (HR: 1.102, 95% CI: 1.046-1.160, $P < 0.001$), and heart rate (HR: 1.008, 95% CI: 1.001-1.015, $P = 0.033$) were prognostic factors of 28-day mortality in solid malignancy patients. In case of hematologic malignancies, BMI (HR: 0.953, 95% CI: 0.919-0.989, $P = 0.011$), albumin (HR: 0.663, 95% CI: 0.481-0.914, $P = 0.012$), oliguria (HR: 1.494, 95% CI: 1.033-2.160, $P = 0.033$), and SOFA score (HR: 1.101, 95% CI: 1.043-1.161, $P < 0.001$) were prognostic factors of 28-day mortality.

Conclusions: The 28-day mortality was extremely high in patients with hematologic malignancies undergoing CRRT than those with solid malignancies. BMI, albumin, oliguria and SOFA score were common determinants for predicting the mortality of all patients with malignancies after application of CRRT.

Fig1.ROC curve in solid malignancies

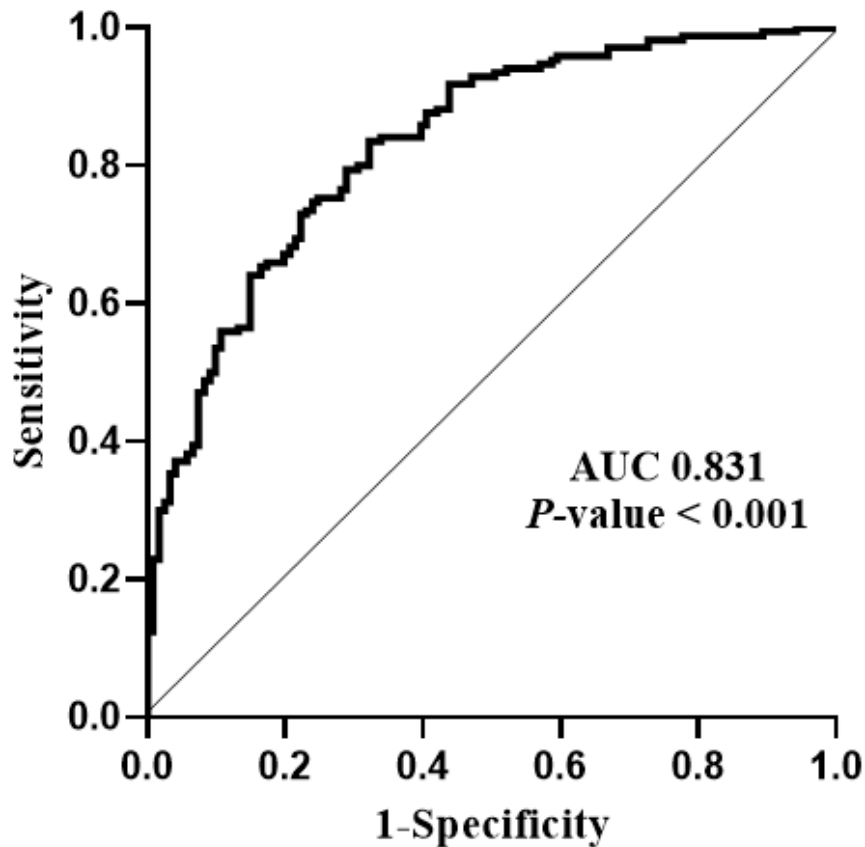


Fig 1. The ROC curve using variables (BMI, albumin, oliguria, metabolic acidosis, SOFA score, heart rate) in solid malignancy patients. The AUC for 28-day mortality was 0.831 ($P < 0.001$). Positive predictive value was 78.16% and negative predictive value was 74.87%.

Fig2.ROC curve in hematologic malignancies

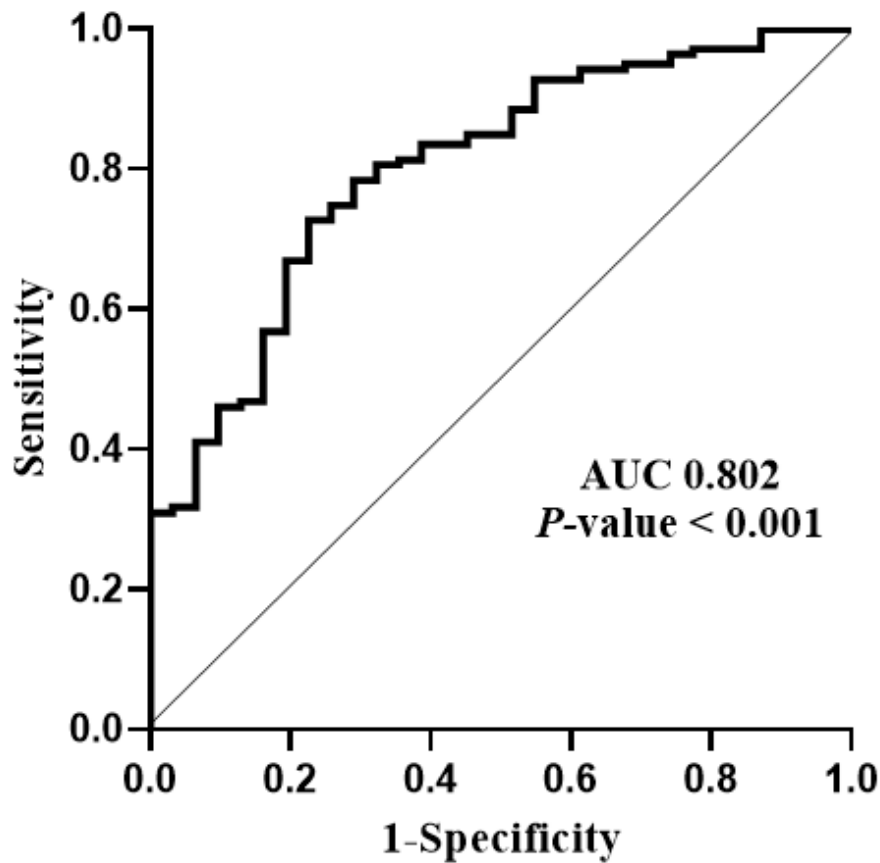


Fig 2. The ROC curve using variables (BMI, albumin, oliguria, SOFA score) in hematologic malignancy patients. The AUC for 28-day mortality was 0.802 ($P < 0.001$). Positive predictive value was 84.71% and negative predictive value was 62.73%.