

## Impact of Transient or Persistent Acute Kidney Injury on Chronic Kidney Disease Progression and Mortality after Gastric Surgery for Gastric Cancer

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**Background:** Acute kidney injury (AKI) was common after gastric surgery for gastric cancer and associated with adverse outcomes. However, impact of transient or persistent AKI on clinical outcomes after gastric surgery for gastric cancer has not been described. The objective of this study was to determine the incidence, factors, and clinical outcomes associated with transient or persistent AKI after gastric surgery.

**Methods:** We performed a retrospective study of 4886 patients with normal renal function who underwent partial or total gastrectomy for gastric cancer between June 2002 and December 2012. Transient AKI was defined as return of serum creatinine to the no-AKI range at discharge after gastric surgery. Our outcomes included occurrence of new-onset chronic kidney disease (CKD), and long-term kidney function and mortality.

**Results:** AKI occurred in 638 (13.1%) after gastric surgery. Of these, transient AKI was documented in 556 (87.1%). Length of intensive care unit (ICU) and hospital stay, and ICU admission rate (5.8% versus 1.0%) were higher in patients with transient AKI than in those without AKI. Male, use of diuretics and postoperative vasopressor, and lower baseline creatinine were common risk factors for persistent and transient AKI after gastric surgery. After adjusting for confounding factors, patient with persistent and transient AKI had a significantly higher new-onset CKD (odds ratio [OR], 3.60; 95% CI, 1.77-7.34;  $p < 0.001$ ; OR, 1.62; 95% CI, 1.16-2.26,  $p = 0.005$ , respectively) and 1-year mortality (OR, 12.70; 95% CI, 7.57-21.31;  $p < 0.001$ ; OR, 1.75; 95% CI, 1.15-2.66,  $p = 0.009$ , respectively) compared with no-AKI.

**Conclusion:** Not only persistent AKI but Transient AKI is associated with increased of hospital complications and a significantly higher risk of CKD progression and long-term mortality than patients without AKI after gastric surgery.

**Key Words:** AKI, CKD, Gastric surgery