

Incidence, Risk Factors and Clinical Outcomes of Acute Kidney Injury after Gastric Surgery for Gastric Cancer

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Background: Postoperative acute kidney injury (AKI) is a serious complication in surgical patients. Despite many studies have reported a high incidence of AKI after cardiac surgery, there are few reports on the renal and clinical outcomes of AKI after noncardiac surgery. The aim of this study was to determine the incidence and risk factors of AKI, and clinical outcomes after gastric surgery for gastric cancer.

Methods: We conducted a retrospective study of 4718 patients with preoperative normal renal function who underwent partial or total gastrectomy for gastric cancer between June 2002 and December 2011. Postoperative AKI was defined by Kidney Disease: Improving Global Outcomes guideline, which is based on the serum creatinine changes.

Results: Of the 4718 patients, 679 (14.4%) developed AKI. Hospital length of stay and intensive care unit admission rates were greater in AKI patients. AKI was associated with renal replacement therapy and a higher in-hospital mortality rate than non-AKI (3.5% versus 0.2%). Multivariate analysis revealed that male gender [odds ratio (OR) 1.75, 95% confidence interval (CI) 1.37-2.23], hypertension (OR 1.27, 95% CI 1.04-1.54), chronic obstructive pulmonary disease (OR 1.64 95% CI 1.15-2.35), hypoalbuminemia (<4 g/dl) (OR 1.40 95% CI 1.11-1.77), use of diuretics (OR 2.39 95% CI 1.98-2.88), vasopressor (OR 1.87 95% CI 1.28-2.72) and contrast agent (OR 1.60 95% CI 1.29-2.00), and packed red blood cell transfusion (OR 1.72 95% CI 1.38-2.15) were independent risk factors for post-operative AKI after gastric surgery. Patients who experienced postoperative AKI and use of vasopressors had a higher risk of 3-month mortality after multiple adjustments.

Conclusion: AKI was common after gastric surgery for gastric cancer, and associated with adverse outcomes. We identified several factors associated with the postoperative AKI. Recognition of these risk factors is essential for reducing the incidence of AKI after gastric surgery. Furthermore, postoperative AKI in patients with gastric cancer is an important risk factor for short-term mortality.

Key Words: 급성 신손상, 수술, 위암

Acute kidney injury, Operation, Gastric cancer