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관상동맥우회수술 후 발생한 급성신손상이 환자의 임상경과에 미치는 영향에 관한 연구

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The Effect of Acute Kidney Injury on the Long- and Short-term Outcomes of the Patients with Coronary Artery Bypass Grafting

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Purpose: Acute kidney injury after coronary artery bypass grafting surgery has been proved as an important and independent predictor of morbidity and mortality. Therefore, how to identify the high-risk patients is very important and it will be helpful for early intervention by early prediction and detection of acute kidney injury.

Methods: We analyzed the patients who underwent coronary artery bypass grafting surgery between 2004 and 2010. Univariate and multivariate regression was performed to analyze the association between AKI and non-AKI group. AKI was defined as a ≥50% increase above baseline or change ≥0.3 mg/dL in serum creatinine by Acute Kidney Injury Network (AKIN) classification. Using electronic database, baseline characteristics (demographics, underlying diseases), preoperative medication (antiplatelet agents, ACEI/ARB, beta blocker, statins, diuretics), preoperative factors (laboratory data), operative factors (emergency, off-pump, intra-aortic balloon pump, re-do operation) were examined.

Results: Among a total of 865 patients, postoperative acute kidney injury developed in 325 (37.6%) patients. In a univariate logistic regression model, old myocardial infarction, chronic obstructive pulmonary disease, heart failure, use of antiplatelet agents, CRP, albumin, hemoglobin, albuniuria (dipstick test) , CKD stage(1,2 vs.3,4,5) each were associated with an increased odds of AKI. Operative factors, as off-pump, intra-aortic balloon pump, re-do-operation and emergent operation were associated with an increased odds of AKI. In a multivariate logistic regression model, BMI, pump op., IABP, albumiuria, CKD stage (stage 1,2 vs.3,4,5) were related to increased risk of AKI. In-hospital mortality were increased in the AKI group (OR=3.834).

Conclusion: 325 (37.6%) of total 865 patients underwent acute kidney injury after CABG. The group of AKI after CABG was related to high in-hospital mortality. The risk factors associated with AKI after CABG were high BMI, COPD, pump op, IABP insertion, albuminuria, CKD stage. When we encounter the cardiac surgery, we can predict the incidence of AKI by considering their perioperative factors, and can prepare the early intervention.

Key Words: 관상동맥우회술, 급성신손상, 사망
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