**Evaluating the incidence of acute kidney injury and tacrolimus dosing regimen in heart transplant recipients receiving basiliximab induction therapy.** Nakamura T., Ikura M., Wada K., Nagata R., Ueno T., Kawabata K., Yoshihara F., Watanabe T., Tsukamoto Y. Education and Research Center for Clinical Pharmacy, Faculty of Pharmacy, Osaka Medical and Pharmaceutical University, Takatsuki; Department of Pharmacy, National Cerebral and Cardiovascular Center, Suita; Department of Hypertension and Nephrology, National Cerebral and Cardiovascular Center, Suita; and Department of Transplant Medicine, National Cerebral and Cardiovascular Center, Suita, Japan.

Background: Tacrolimus can exacerbate pre-operative renal dysfunction or induce acute kidney injury (AKI) in heart transplant recipients. To avoid renal episodes in the early period after heart transplantation, a strategy to delay the start of tacrolimus administration is considered while controlling acute rejection by the induction of basiliximab. In the present study, we evaluated the incidence of acute kidney injury and tacrolimus dosing regimen early after heart transplantation in heart transplant recipients who received induction therapy with basiliximab.

Methods: A total of 52 patients treated with tacrolimus-based immunosuppressive therapy after basiliximab induction therapy were retrospectively reviewed. The target concentration was set at 10 ng/mL early after the start of tacrolimus administration. The association between the time to start tacrolimus administration and the time to reach the tacrolimus target concentration trough with AKI was evaluated. AKI was defined according to the Kidney Disease Improving Global Outcomes Guidelines and evaluated within 7 days of tacrolimus administration. The baseline serum creatinine level was set at the initiation of tacrolimus administration.

Results: The median baseline serum creatinine level was 0.86 (interquartile range 0.68–1.11) mg/dL. AKI was developed in 8 (15.4%) patients. The cumulative incidence of AKI in patients whose start time of tacrolimus was before or after 14 postoperative days was 16.7% (7/42) and 10.0% (1/10), respectively. In contrast, the values in those whose time to reach the target concentration were before or after 12 days after starting tacrolimus administration were 11.6% (5/43) and 33.3% (3/9), respectively. No significant difference was observed in either indicator. When the threshold of estimated glomerular filtration rate at the start of tacrolimus administration was determined using receiver operating characteristic analysis, the cumulative incidence of AKI was significantly different between patients with the value below or above 43 mL/min/$m^2$ ($p = 0.045$).

Conclusions: The present findings suggest that in patients receiving basiliximab induction therapy, the timing of tacrolimus initiation and the time to reach the target concentration are unlikely to be associated with early AKI after tacrolimus administration. However, the recovery of sufficient renal function after heart transplantation is important for determining the start time of tacrolimus.

Keywords: renal failure; tacrolimus; basiliximab; blood concentration; heart transplantation