

## Clinical Usefulness of AKIN Riteria in Deceased Donor Kidney Transplantation

Myung Hyun Lee<sup>1,2</sup>, Hyung Sook Kim<sup>1,2</sup>, Chang Eon Lee<sup>1,2</sup>, Young Ha Choi<sup>1,2</sup>  
 Ji-II Kim<sup>1,3</sup>, In Sung Moon<sup>1,3</sup>, Bum Soon Choi<sup>1,2,4</sup>, Cheol Whee Park<sup>1,2,4</sup>  
 Chul Woo Yang<sup>1,2,4</sup>, Yong-Soo Kim<sup>1,2,4</sup>, Byung Ha Chung<sup>1,2,4</sup>

<sup>1</sup>Transplant Research Center,

<sup>2</sup>Division of Nephrology, Department of Internal Medicine,

<sup>3</sup>Department of Surgery,

<sup>4</sup>Laboratory Medicine

Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Korea

**Introduction:** To address critical shortage of donor kidneys, the use of cadaveric kidneys from deceased donors with acute kidney injury (AKI) has been adopted. However, criteria of AKI to affect renal graft outcome after kidney transplantation(KT) in deceased donors has not been established. In this study, we analyzed the renal graft function and graft survival after KT of deceased donors with AKI defined using AKIN(Acute Kidney Injury Network) criteria at the time of transplantation.

**Methods:** We analyzed 113 deceased donor kidney grafts transplanted at our institution between January 2008 and September 2012. Donors were stratified into non-AKI and AKI groups (stage 1,2, and 3) according to the AKIN classification. Out of 113 donors, 35 cases (31%) of AKI defined by AKIN criteria developed. Twenty-nine donors (26%) were included in stage 1, 5(4%) in stage 2 and 1(0.9%) in stage 3 categories. We compared the incidence of delayed graft function(DGF), the change of allograft function assessed by MDRD-eGFR until 1 year from KT and graft failure between two groups.

**Results:** The proportion of deceased donors with diabetes, hypertension and old age (>50 years) did not differ between AKI and non-AKI groups. The development of DGF was significantly higher in the AKI group than in the non-AKI group recipients (13.8% vs 9.7%,  $p<0.05$ ). Independent predictors of DGF were AKI defined by AKIN criteria (OR 1.0,  $p=0.001$ ) and PRA (panel reactive antibody) percentage (OR 4.3,  $p=0.017$ ) in multivariate analysis. Allograft function until 6 months from KT showed significantly deteriorated pattern in AKI group compared to non-AKI group as well (8.72±5.17 vs 18.43±15.78, 42.5±24.84 vs 58.8±26.98, 48.31±17.13 vs 62.18±21.19, 52.88±15.03 vs 60.1±18.81, 53.92±17.9 vs 60.78±18.4 ; MDRD-eGFR on 3 day, 2weak, 1month, 3months and 6months in AKI and non-AKI group, respectively). However, allograft function at 12 months from KT did not differ between two groups (55.62±20.75 vs 62.11±26.42; MDRD-eGFR in AKI and non-AKI group, respectively). Graft failure also did not differ between two groups (5.6% vs 2.8%,  $p>0.05$ ).

**Conclusion:** In deceased donor KT, definition of AKI according to AKIN criteria at the time of transplantation is useful to predict the development of DGF after transplantation and graft function until 6 months from KT.

**Key Words:** AKIN 기준, 급성신부전, 뇌사공여자

AKIN criteria, Acute kidney Injury, Deceased donor