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## **Impact of donor age on outcome of kidney transplantation from deceased donor with histologic acute kidney injury**

**Ki Joon Lim**<sup>1</sup>, Hyunseo Kim<sup>1</sup>, Joo Young Kim<sup>2</sup>, Yoo Jin Lee<sup>2</sup>, Jihyung Yang<sup>1</sup>, Sewon Oh<sup>2</sup>, Cheolwoong Jung<sup>3</sup>, Sang-Kyung Jo<sup>1</sup>, Wonyong Cho<sup>1</sup>, Myung-Gyu Kim<sup>1</sup>

<sup>1</sup>Department of Internal Medicine-Nephrology, Korea University Anam Hospital, Korea, Republic of

<sup>2</sup>Department of Pathology, Korea University Anam Hospital, Korea, Republic of

<sup>3</sup>Department of Surgery-Transplantation, Korea University Anam Hospital, Korea, Republic of

### **Objectives:**

The shortage of donors has expanded donor criteria and kidneys from elderly donors with acute kidney injury (AKI) have also been used for transplant recently, but safety and prognosis are not well known. Here, we examined the effect of donor age on outcomes of kidney transplant (KT) from donor with histologic AKI.

### **Methods:**

We analyzed retrospectively the medical records of 59 deceased-donor KT with acute tubular necrosis (ATN) on pre-implantation donor kidney biopsy between March 2012 and October 2017. Histologic quantifications of ATN and inflammation, glomerular sclerosis (GS), interstitial fibrosis, tubular atrophy, and arterial sclerosis were performed.

**Results:** Twenty and thirty nine recipients were received kidney from old (>60, 68.9±5.0) and young donors (≤60, 45.9±9.6) with ATN, respectively. In the old donors, a significant increase in donor Cr was observed only in 44%, diabetic patients were higher, women were dominant, and the percent of GS(%) was significantly higher than in young donors.

After KT, six months eGFR was significantly lower in recipients who received kidney from old donors than from young donors. Donor creatinine level and AKI severity according to AKIN criteria did not significantly affect the recipient outcome in both groups during 6mo post-transplant. However, only in KT from old donors, the presence of ATN and GS(%) were found to be significant factors exacerbating renal outcome at 6mo. In particular, in multivariate analysis, the sum of ATN scoring and GS percent was the strongest independent factor for predicting recipient renal function.

### **Conclusions:**

Taken together, the assessment of AKI based on creatinine is not useful for predicting prognosis, but in KT from old donors, acute tissue injury as well as GS could predict renal outcome. Therefore, a donor allocation protocol with evaluating histologic acute and chronic lesions through pre-implantation donor kidney biopsy need to be developed when transplanting kidney from old donors.