

## 확장 범주 뇌사자의 신장 이식 성적

서울대학교병원 내과<sup>1</sup>, 장기이식센터<sup>2</sup>

한미연<sup>1</sup>, 이선화<sup>1</sup>, 정종철<sup>2</sup>, 권혁용<sup>2</sup>, 김윤정<sup>2</sup>, 구태연<sup>2</sup>, 전희중<sup>1</sup>, 안규리<sup>1</sup>, 양재석<sup>2</sup>

### Kidney Donor Risk Index is a Good Prognostic Tool for Graft Outcomes in Deceased-donor Kidney Transplantation with Short, Cold Ischemic Time

Miyeun Han<sup>1</sup>, Sunhwa Lee<sup>1</sup>, Jong Cheol Jeong<sup>2</sup>, Hyuk Yong Kwon<sup>2</sup>, Yoon Jung Kim<sup>2</sup>  
Tai Yeon Koo<sup>2</sup>, Hee Jung Jeon<sup>1</sup>, Curie Ahn<sup>1</sup>, Jaeseok Yang<sup>2</sup>

Department of Internal Medicine<sup>1</sup>, Transplantation Center<sup>2</sup>, Seoul National University Hospital

**Background:** The shortage of donor kidneys necessitates the use of expanded criteria donor (ECD) kidneys. However, prognostic tools for predicting allograft outcomes are required to facilitate use of the ECD kidneys. Graft outcomes from the ECD kidneys in regions with short, cold ischemic time might be different from those in regions with long, cold ischemic time. Here, we investigated the prognostic values of various tools for assessing deceased donor kidneys in Korea with short, cold ischemic time.

**Methods:** We retrospectively reviewed 357 cases of deceased donor kidney transplantation that had been performed in Seoul National University Hospital from 1997 to 2011. Donor kidneys were classified to ECD or standard criteria donor (SCD) according to the United Network for Organ Sharing (UNOS) criteria. They were also assessed by kidney donor risk index (KDRI). Zero-time kidney biopsy was performed in 196 patients, and histological grade was assessed.

**Results:** Forty-two cases (11.3%) used kidneys from ECDs, and the proportion of ECD has increased during the study period (7.1% in 2007 vs. 15.9% in 2011). The cold ischemic time was only 4.9±2.7 hours (mean±standard deviation). Five donor variables [age, history of hypertension, estimated glomerular filtration rate (eGFR), cause of death, severity of glomerular sclerosis on pathology finding] were significantly associated with 1-year eGFR after transplantation. Although the ECD groups had lower 1-year eGFR than the SCD groups, graft failure rate was not significantly different between the two groups. Lower recipient 1 year eGFR was shown in higher KDRI group (1.119-4.047) than lower KDRI group (0.576-1.118) (58.2±15.9 vs. 75.4±17.3ml/min/1.73m<sup>2</sup>, p<0.001). KDRI showed best correlation with recipient 1-year eGFR (R<sup>2</sup>=0.308, p<0.001) compared to the UNOS criteria (R<sup>2</sup>=0.207, p<0.001) or histological score (R<sup>2</sup>=0.167, p<0.001). Furthermore, higher KDRI was associated with a higher risk for graft failure (hazard ratio 5.32, 95% confidence interval 1.37-20.68, p=0.016).

**Conclusion:** KDRI can predict allograft outcomes better than the UNOS criteria for ECD and histological grade in deceased donor kidney transplantation with short, cold ischemic time.

**Key Words:** 신장이식, 뇌사자, 확장 범주

Kidney transplantation, Expanded criteria donor, Deceased donor