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## **Residence and kidney transplantation outcomes in South Korea: A Nationwide population-based cohort study**

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**Objectives:** Kidney transplantation is an effective treatment for end stage renal failure. The characteristics and outcomes of renal replacement therapy in urban and rural areas have been studied in western countries, but there is no data in Asian countries. The purpose of this study is to investigate the characteristics and outcomes of kidney recipients according to their residential areas.

**Methods:** We conducted nationwide study using National Health Information Database to analyse the graft and patient's survival of kidney recipients who had kidney transplantation between 2006 and 2015 in South Korea according to their residence in Seoul, 6 metropolitan cities, and other regions.

**Results:** Among the 13399 kidney recipients, 2712 recipients lived in Seoul, 3623 recipients lived in metropolitan cities and 7059 recipients lived in other areas. Baseline characteristics of the recipients in these three areas did not show any difference.

The risk of death-censored graft failure after adjustment of age, sex, duration of dialysis, insurance status, and underlying diseases were significantly higher in residences of metropolitan cities and residences of other areas compared to residences of Seoul (metropolitan : HR 1.42 95% CI 1.26-1.60,  $p < 0.001$ , Other area : HR 1.13 95% CI 1.02-1.26,  $p = 0.021$ ). Patients' mortality was also higher in residences of metropolitan and other area (metropolitan : HR 1.31 95% CI 1.04-1.64,  $p = 0.020$ , Other area : HR 1.22 95% CI 1.00-1.49,  $p = 0.047$ ). On the other hand, there was no difference in death-censored graft failure and patients' mortality according to the region of transplantation centers in Seoul, 6 metropolitan cities and other areas.

**Conclusions:** Although there was no difference in renal and patient's outcomes according to the location of transplantation centers, the outcomes differed according to the residential area of the kidney recipients. Further analysis will be conducted to determine whether these discrepancies are related to specific regional characteristics or compliance of transplant recipients.