



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

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Long-Term Risks of Mortality, Cardiovascular Events, and End-Stage Kidney Disease in Living Kidney Donors: A Nationwide Propensity Score Matched Cohort Study

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Objectives : The long-term safety of living kidney donation remains a clinical concern, particularly regarding mortality, cardiovascular (CV) outcomes, and end-stage kidney disease (ESKD). We compared these risks between living kidney donors and matched healthy controls.

Methods : This nationwide retrospective cohort study was conducted using linked Korean healthcare big data. Individual-level data were integrated from the Health Insurance Review and Assessment Service, the Korea Disease Control and Prevention Agency, Statistics Korea, and the Korea Network for Organ Sharing. Living kidney donors were matched with healthy controls using exact propensity score matching. Primary outcomes were all-cause mortality, composite CV events plus death, and ESKD, defined as kidney transplantation or initiation of dialysis. Hazard ratios (HRs) and 95% confidence intervals (CIs) were estimated using Cox proportional hazards models.

Results : After exact propensity score matching, 7,513 donors and 11,313 healthy controls were included. Among healthy controls, 46.4% were men and 53.6% were women; corresponding proportions among donors were 47.3% and 52.7%. Participants aged ≥ 60 years comprised 17.5% of healthy controls and 5.9% of donors. Compared with healthy controls, donors had a lower risk of all-cause mortality (HR 0.47, 95% CI 0.34–0.65; $p < 0.001$), but this association was attenuated after adjustment (HR 0.67, 95% CI 0.41–1.12; $p = 0.124$). The HR for composite CV events plus death did not differ significantly between donors and healthy controls (HR 1.36, 95% CI 0.92–2.03; $p = 0.127$). In contrast, donors had a higher risk of ESKD than healthy controls (HR 15.00, 95% CI 4.56–49.31; $p < 0.001$).

Conclusions : Compared with healthy controls, living kidney donors did not have increased long-term mortality or composite CV events but had a higher risk of ESKD.