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Long-term risk of end-stage kidney disease and all-cause mortality in live kidney donors of South Korea: a matched cohort study

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Objectives: Long-term kidney and patients' outcomes of live kidney donors remain controversial although they are crucial information in selecting potential donors.

Methods: We performed a retrospective cohort study including donors from 7 government-designated tertiary hospitals in South Korea from 1982 to 2016. Health screening examinees in the Seoul National University Hospital were included as the control population. We also constructed a matched control group accounted for age, sex, era, body mass index, baseline hypertension, diabetes mellitus, eGFR, and dipstick albuminuria. The study outcome was progression to end-stage kidney disease (ESKD) and all-cause mortality, identified in the claims database of Korea. The risk of the outcomes was analyzed by the logistic regression analysis, accounting for other clinicodemographic variables.

Results: We screened 3,386 kidney transplantation donors and 102,379 health screening examinees. We identified 20 (0.6%) and 281 (0.3%) ESKD events, 174 (5%) and 5,469 (5%) all-cause mortality events, among the screened donors and health screening examinees, respectively. After matching, 1,976 persons in each group remained for further analysis. The median age of the matched study subjects was 44 years old, and 46.5% had male sex among the study subjects, with approximately 2% and 12% of underlying diabetes and hypertension prevalence, respectively. There were 6 (0.3%) ESKD events in the matched donor group, while none of the matched health screening examinees experienced the outcome. There were 40 (2%) and 19 (1%) all-cause mortality in the matched donor and the healthy groups, respectively. In the multivariable analysis, both the risks for all-cause mortality [adjusted OR 1.75 (1.06-2.98)] and progression to ESKD [adjusted OR

12.82 (1.52-1670.81)] were significantly higher in the matched donor group than the matched health screening examinees.

Conclusions: In Korea, kidney donors may have higher risks of progression to ESKD and all-cause mortality when compared to healthy individuals with similar baseline characteristics.