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## **Sub-optimal Renal Recovery and Progressive Chronic Kidney Disease after Living Kidney Donation**

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**Objectives:** Post-operative renal recovery after nephrectomy is a substantial problem to be addressed in living kidney donors. Herein, we explored factors associated with renal recovery and progression to advanced chronic kidney disease (CKD) in living donors.

**Methods:** Kidney donors who underwent nephrectomy from 1982 to 2016 were retrospectively reviewed. We extracted donors who had estimated glomerular filtration rate (eGFR) at 1 month after kidney donation with follow-up period over one year. Percent change of eGFR from initial to one month after donation was calculated. The sub-optimal renal recovery was defined as recovery of eGFR less than 70%. The development of advanced CKD, latest eGFR < 60 ml/min/m<sup>2</sup> were the clinical end-point. Cox-regression and logistic regression analysis were used to determine the risk factor related with sub-optimal renal recovery and progressive CKD.

**Results:** In total, 606 donors were included in the study. The mean follow-up period was 82.3 ± 65.1 months. Of which, 402 showed sub-optimal renal recovery at 1 month, and 107 developed advanced CKD. The initial eGFR (adjusted HR 0.950, 95% CI 0.933-0.968, p < 0.001) and sub-optimal renal recovery at 1 month (adjusted HR 3.228, 95% CI 1.869-5.574, p < 0.001) were the significant risk factors for development of advanced CKD in multivariate Cox-regression analysis. In addition, donors having older age (adjusted OR 1.053, 95% CI 1.033-1.073, p < 0.001), male sex (adjusted OR 1.839, 95% CI 1.043-3.243, p = 0.035), lower serum protein (adjusted OR 0.559, 95% CI 0.352-0.888, p = 0.014), hyperuricemia (adjusted OR 2.599, 95% CI 1.239-5.451, p = 0.012), and initial eGFR (adjusted OR 1.047, 95% CI 1.031-1.062, p < 0.001) tended to develop sub-optimal renal recovery after donation.

**Conclusions:** Earnest evaluation and management to reduce risk factors for sub-optimal renal recovery after donation could be helpful in improving long-term renal outcomes in living kidney donors.