

**Abstract Type : Oral**

**Abstract Submission No. : 1070**

## **Association of serum activin level with progression of chronic kidney disease in patients with kidney transplantation: results from the KNOW-KT**

**Hui-Yun Jung**, Beom Seok Kim, Jaeseok Yang

Department of Internal Medicine-Nephrology, Severance Hospital, Korea, Republic of

**Objectives:** Serum Activin A, TGF- $\beta$  superfamily member, is a proinflammatory factor accumulating in chronic kidney disease (CKD). Activin A has been reported to contribute to vascular calcification and kidney fibrosis in CKD. We investigated whether higher serum activin level was associated with poor kidney outcomes in kidney transplant patients.

**Methods:** A total of 611 kidney transplant patients from KNOW-KT (KoreaN cohort study for Outcome in patients With Kidney Transplantation) were analyzed. We measured activin level at baseline and 1 year after kidney transplantation. The primary outcome was the composite of 50% decline in eGFR and kidney graft loss. The secondary outcome was coronary artery calcification score (CACS) at 5 years after kidney transplantation. Cox regression analysis was performed to analyze association of 1-year activin level with the primary outcome.

**Results:** The mean age was  $45.3 \pm 11.5$  years and 223 (36.5%) patients were male. During 4,230.3 person-years of follow-up (median 6.9 years), the composite outcome occurred in 61 (10.0%) patients. Serum activin levels at 1 year were significantly lower than those at baseline ( $504.7 \pm 264.8$  vs  $701.7 \pm 355.3$ ,  $P < 0.001$ ). When patients were grouped according to median activin level at 1 year, Cox regression analysis showed that risk of the composite kidney outcome was 2.26-fold (95% confidence interval [CI], 1.30-3.92,  $P = 0.004$ ) higher in patients with higher activin level. In continuous modeling, 1 SD increase in serum activin level was associated with a 1.41-fold (95% confidence interval [CI], 1.14-1.75,  $P = 0.001$ ) higher risk of composite kidney outcome. Binary logistic regression analysis demonstrated that activin level was significantly associated with CACS (Odds Ratio 1.7, 95% CI 1.1-2.6,  $P = 0.014$ ). However, the activin levels did not increase risk of cardiovascular events.

**Conclusions:** Post-transplant activin level was independently associated with renal functional deterioration as well as coronary calcification in kidney transplant patients.