

# KSN 2016 Abstract Submission

*CKD & associated complications*

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## **Effects of arteriovenous fistula creation on trajectory of estimated glomerular filtration rate**

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**Background:** Arteriovenous fistula (AVF) is the ideal model of vascular access in hemodialysis. There is little known about the systemic cardiovascular changes that occur as a consequence of AVF creation. Recent investigations reported the microcirculatory effects of AVF and suggested the relationship between AVF formation and preserving renal function. In present study, we examined the effects of AVF formation on decline of renal function in pre-dialysis patients and evaluated the influencing factors on effects of AVF.

**Methods:** We performed a retrospective study of 79 pre-dialysis patients who underwent an AVF creation between 2011 and 2015. These patients were followed prospectively over 1 year after AVF creation. We assessed the clinical parameters and laboratory data 1 year prior to AVF creation and at the time of termination or 1 year after AVF. Termination events were defined as starting dialysis, kidney transplantation or death. Estimated glomerular filtration rate (eGFR) was expressed through the Modification of Diet in Renal Disease (MDRD) equation.

**Results:** Median age was 62 years, 52% were male, 58% were diabetic, 81% were hypertensive and mean eGFR at AVF creation was  $9.1 \pm 2.12$  mL/min/1.73m<sup>2</sup>. Prior to AVF formation, the rate of change of the eGFR was  $-8.34 \pm 7.68$  mL/min/year and after AVF formation  $-5.90 \pm 7.07$  mL/min/year ( $p = 0.026$ ). Underlying diseases and the site of AVF formation were related with slower eGFR trajectory after AVF creation. In diabetic patients, eGFR decline slope was suppressed from  $-10.23 \pm 8.1$  mL/min/year to  $-5.58 \pm 7.1$  mL/min/year and AVF creation in the forearm was more effective at slowing eGFR decline.

**Conclusion:** AVF formation was associated with the decline of eGFR slope. AVF formation in the forearm may be helpful in delaying the time to initiate dialysis, especially in diabetic patients.

**Keywords:** Arteriovenous fistula, chronic kidney disease, eGFR