

**Abstract Submission No. : 1184**

**Diastolic heart dysfunction and progression of chronic kidney disease:  
Analysis from the KNOW-CKD study**

**Eunjeong Kang**<sup>1</sup>, Sung woo Lee<sup>2</sup>, Sue Kyung Park<sup>3</sup>, Ji Yong Jung<sup>4</sup>, Kyu-Beck Lee<sup>5</sup>, Seung Hyeok Han<sup>6</sup>

<sup>1</sup>Department of Internal Medicine-Nephrology, Ewha Womans University Medical Center, Korea, Republic of

<sup>2</sup>Department of Internal Medicine-Nephrology, Eulji University School of Medicine, Korea, Republic of

<sup>3</sup>Department of Preventive Medicine, Seoul National University College of Medicine, Korea, Republic of

<sup>4</sup>Department of Internal Medicine-Nephrology, Gachon University Gil Medical Center, Korea, Republic of

<sup>5</sup>Department of Internal Medicine-Nephrology, Kangbuk Samsung Hospital, Korea, Republic of

<sup>6</sup>Department of Internal Medicine-Nephrology, Severance Hospital, Korea, Republic of

**Objectives:** Few studies have examined the association between early diastolic mitral inflow velocity to early diastolic mitral annulus velocity ratio ( $E/e'$ ) and progression of chronic kidney disease (CKD).

**Methods:** We reviewed the data of 2,238 patients from a large-scale, multicenter, prospective Korean study (2011–2016); 163 patients missing important data including echocardiographic measures were excluded. Renal event was defined as a >50% decrease in estimated glomerular filtration rate (eGFR) from baseline, doubling of serum creatinine, or dialysis initiation.

**Results:** At baseline, the median (interquartile range) ejection fraction (EF) and  $E/e'$  were 64.0% (60.0%–68.0%) and 9.1 (7.4–11.9), respectively. The rates of EF <50% and  $E/e' \geq 15$  were 1.3% and 9.6%, respectively. The proportion of eGFR <30 ml/min/1.73m<sup>2</sup> was 27.2%. During the mean 59.1-month follow-up period, 724 patients (34.9%) experienced renal events. In multivariate Cox proportional hazard regression analysis, the hazard ratio (HR) and 95% confidence interval (CI) per one unit increase in  $E/e'$  were 1.027 (1.005–1.050;  $P = 0.016$ ). In penalized spline curve analysis, the suggested threshold of  $E/e'$  for renal events was 12, and the proportion of  $E/e' \geq 12$  was 4.1%. The susceptible subgroups for the renal hazard of increased  $E/e'$  were patients with EF <64%.

**Conclusions:** Increased  $E/e'$  was associated with an increased hazard of renal events, suggesting that diastolic heart dysfunction is a novel risk factor of CKD progression.