KSN 2017 Abstract

KSN-17-O030

The Effects of Coffee Intake on the Incident Chronic Kidney Disease in General Population

Jong hyun JHEE[1], Ki heon NAM[1], Seong yeong AN[1], Min-uk CHA[1], Misol LEE[1], Seohyun PARK[1], Hyoungnae KIM[1], Hae-ryong YUN[1], Youn kyung KEE[1], Jung tak PARK[1], Tae-hyun YOO[1], Shin-wook KANG[1,2], *Seung hyeok HAN[1]

[1]Internal Medicine, College of Medicine, Institute of Kidney Disease Research, Yonsei University, Seoul, Korea, Korea,South, [2]Internal Medicine, College of Medicine, Severance Biomedical Science Institute, Brain Korea 21 PLUS, Yonsei University, Seoul, Korea, Korea,South

Objectives : The effects of habitual coffee consumption on health have been a public concern. However, the association between coffee intake and kidney disease is unknown. This study aimed to investigate whether coffee intake can have an impact on the development of chronic kidney disease (CKD) in general population.

Methods : Using the database from the Korean Genome and Epidemiology Study (KoGES) from 2001 to 2014, we analyzed 9644 subjects with normal renal function. Coffee consumption was categorized into 5 groups; 0/wk (n=2232), < 1 cup/wk (n=618), 1-6 cups/wk (n=1690), 1 cup/day (n=2645), and ≥ 2 cups/day (n=2459). All measurements such as blood pressure, body mass index, estimated glomerular filtration rate (eGFR), fasting glucose, hemoglobin, and lipid profiles during follow-up period were treated as time-varying covariates. The primary outcome was incident CKD defined as an eGFR < 60 mL/min/1.73m2.

Results : The mean age was 52.0 years and 4594 (47.6%) were male. At baseline, higher coffee consumers were younger, had higher blood pressure, and had higher prevalence of hypertension and diabetes as compared to non-drinkers or lower consumers. Time-averaged blood pressure was also higher as coffee consumption was increased. A multivariate linear regression model showed that high coffee consumption independently associated with low systolic blood pressure (ß = -0.52, P < 0.001). During a mean follow up of 124.8 months, 839 (8.6%) participants developed CKD. The incident CKD occurred in 224 (10.0%), 69 (11.2%), 148 (8.8%), 209 (7.9%), and 174 (7.1%) individuals in the coffee consumption groups of 0/wk, < 1 cup/wk, 1-6 cups/wk, 1 cup/day, and ≥ 2 cups/day, respectively (P for trend < 0.001). In a time-varying Cox model after adjustment of confounding factors, coffee consumption of ≥ 1 cup/day [hazard ratio (HR), 0.74; 95% confidence interval

(CI), 0.59–0.92; P = 0.01] and ≥ 2 cups/day (HR, 0.77; 95% CI, 0.60–0.98; P = 0.03) were significantly associated with a lower risk of CKD development.

Conclusions : Our findings suggest beneficial effect of coffee intake of ≥ 1 cup/day on the incident CKD. This can be partly explained by coffee intake-associated decrease in blood pressure.

Keywords : Coffee intake, chronic kidney disease, blood pressure