KSN 2017 Abstract

KSN-17-O034

High Dietary Phosphorus Intake is a Risk Factor for Incident Chronic Kidney Disease Development in Diabetic Subjects: A Community-Based Prospective Cohort Study

Seong yeong AN[1], Chang-yun YOON[1], Jung tak PARK[1], Jong hyun JHEE[1], Juhwan NOH[3], Youn kyung KEE[1], Misol LEE[1], Min-uk CHA[1], Ki heon NAM[1], Hyoungnae KIM[1], Seohyun PARK[1], Hae-ryong YUN[1], Su-young JUNG[1], Seung hyeok HAN[1], Tae-hyun YOO[1], *Shin-wook KANG[1,2]

[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, [3]Preventive Medicine, Yonsei University College of Medicine, Seoul, Republic of Korea, Korea,South

Objectives : Studies on the relationship between dietary phosphorus (Pi) intake and chronic kidney disease (CKD) development are not sufficient. In this study, we investigated the impact of dietary Pi on the development of incident CKD in a cohort of subjects with normal renal function

Methods : Data were retrieved from the Korean Genome and Epidemiology Study (KoGES), a prospective community-based cohort study. A total of 873 diabetic (DM) and 5,846 non-diabetic (non-DM) subjects were included in the final analysis. The primary end-point was incident CKD, defined as a composite of estimated glomerular filtration rate (eGFR) < 60 ml/min/1.73 m2 and/or the development of proteinuria.

Results : In the diabetic and non-diabetic groups, the mean ages of the participants were 55.6 ± 8.7 and 51.4 ± 8.6 years, the numbers of male subjects were 454 (52.0%) and 2,784 (47.6%), and the mean eGFR was 91.6 ± 14.0 and 94.5 ± 14.0 ml/min/1.73 m2, respectively. The mean values of dietary Pi intake, defined as the ratio of a single-day dietary Pi amount to the total daily calorie intake, were 0.51 ± 0.08 mg/kcal in the DM group and 0.51 ± 0.07 mg/kcal in the non-DM group. During the follow-up, CKD newly developed in 283 (32.4%) and 792 subjects (13.5%) in the DM and non-DM groups, respectively. When the subjects were divided into quartiles according to the dietary Pi intake in each group, the highest quartile was revealed to be significantly associated with the development of incident CKD by multiple Cox proportional hazard analysis in the DM group (P = 0.02), but not in the non-DM group (P = 0.72).

KSN 2017 Abstract

Conclusions : High dietary Pi intake may increase the risk of CKD development in DM patients with normal renal function.

Keywords : dietary phosphorus, chronic kidney disease, diabetes mellitus