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The high dietary PUFA Is Associated with lower prevalence of chronic kidney disease in population-based cohort subjects.

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Objectives: There have been steady interests in the effects of polyunsaturated fatty acid (PUFA) on health and dietary PUFA might have beneficial effects on kidney function. However, large epidemiologic study in general population has been relatively scarce. Therefore, we aimed to evaluate the relationship between dietary PUFA intake and renal function in nationwide nutritional survey.

Methods: Data were retrieved from the KNHANES. Among 31,098 subjects collected from 2013 to 2016, 17,379 subjects were included in final analysis after exclusion. Fraction of PUFA among dietary Fat intake (FPF) was defined as percentage of daily PUFA intake (g) relative to daily total fat intake (g). The subjects were categorized into quartiles according to the FPF. Primary outcome was defined as prevalent CKD with eGFR by korean version of CKD-EPI < 60 mL/min/1.73 m² and composite outcome was eGFR < 60 mL/min/1.73 m² or the presence of proteinuria, defined as ≥ 1+ by dipstick urine test.

Results: The mean FPF was 26.1 ± 9.7 %. Interestingly, the subjects in higher FPF group tended to be older and have slightly lower eGFR. Moreover, they had lower daily fat intake and higher prevalence of HTN, DM and dyslipidemia. Total 713 subjects were found to have prevalent CKD and 860 subjects had composite outcomes. Logistic regression analyses revealed that the risk of CKD was lower in the group with the highest FPF compared to the lowest FPF group after adjustment for confounding factors [odds ratio (OR) 0.72, 95% confidence interval (CI) 0.56-0.91, P = 0.006]. This finding was consistent with composite outcome (OR 0.74, 95% CI 0.59-0.91, P = 0.005).

Conclusions: The risk for decreased kidney function was lower in the subjects with the highest FPF. Fraction of PUFA among dietary fat may affects renal function.