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Associations between Plant-Based Diet, Plant Protein, and Kidney Function in Patients with Autosomal Dominant Polycystic Kidney Disease

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Objectives : Autosomal dominant polycystic kidney disease (ADPKD) is an inherited kidney disease with excessive cysts in the kidneys, which can progress to chronic kidney disease (CKD) and eventual end-stage renal disease. A plant-based diet has received attention in that it may have benefits in preventing the development of chronic diseases such as CKD. This study investigates whether adherence to a plant-based diet is associated with kidney function in patients with ADPKD.
Methods : Subjects of the current study were recruited from patients with ADPKD attending an outpatient clinic in a tertiary hospital. Kidney function was assessed using the estimated glomerular filtration rate (eGFR), and three types of plant-based diet index (PDI), overall PDI, healthful PDI (hPDI), and unhealthful PDI (uPDI), were calculated using dietary intake data.
Results : Overall, PDI and hPDI were lower in advanced CKD subjects compared with early CKD group; however, uPDI was higher in advanced CKD patients. hPDI was negatively correlated with peripheral inflammatory parameters, neutrophil to lymphocyte ratio and platelet to lymphocyte ratio. Moreover, hPDI was inversely associated with advanced CKD, and uPDI was positively associated with advanced CKD. Among analyzed nutrients, dietary fiber intake significantly differed between the lower median and upper median groups of three types of PDI. Also, the frequency of low protein intake was significantly higher in the lower median groups of overall PDI and hPDI but higher in the upper median group of uPDI. In addition, dietary fiber and protein intakes were significantly correlated with eGFR, and dietary fiber, protein, and plant protein intakes were inversely associated with advanced CKD.
Conclusions : The current study's findings demonstrated that higher adherence to a healthful plant-based diet was associated with advanced CKD in patients with ADPKD.