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While questions remain, an analysis of the best available research evidence supports the concept of using a low-protein diet for conservative management of CKD—including a significantly lower risk of progression to end stage renal disease.

“A low-protein diet appears to enhance the conservative management of non-dialysis dependent CKD and may be considered as a potential option for CKD patients who wish to avoid or defer dialysis initiation and to slow down the progression of CKD,” said Kamyar Kalantar-Zadeh, MD, MPH, PhD, of the University of California Irvine.

**Data Support Low-Protein Diet for Conservative Management of CKD**

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by no means a new one. “However, reinvigoration of this idea is considered to have important clinical and public health implications because it may help with conservative and alternative management of CKD,” Kalantar-Zadeh said. “If there is the opportunity to continue to manage CKD without dialysis therapy, if successful, then that will be the preferred option for many patients.”

Along with Denis Fouque, MD, PhD, of Université Claude Bernard Lyon, France, Kalantar-Zadeh co-authored the review of current evidence on nutritional management of CKD, published in the November NEJM. In addition to other constituents, the review highlights new and emerging knowledge on the role of dietary protein in CKD progression. As kidney disease progresses, protein-energy wasting is common, requiring dietary adjustments. The authors summarize animal studies suggesting that a low-protein diet has a “preglomerular effect”—enhancing the postglomerular effect of angiotensin-pathway modulators and thus lowering intraglomerular pressure. Experimental evidence also suggests that the protective effects of a low-protein diet interact synergistically with the direct effects of a low-sodium diet.

What does that mean for low-protein diets in humans? So far, the data have been inconsistent. Most controlled trials have supported the beneficial effects of restricted protein intake on CKD. However, the largest such trial, the Modification of Diet in Renal Disease (MDRD) study, concluded that a low-protein diet had only a minimal effect on progression of CKD, whereas Kalantar-Zadeh’s review of secondary analyses suggests that the MDRD study was more effective than originally thought.

More recently, analysis of data from the Atherosclerosis Risk in Communities (ARIC) Study suggested that protein intake is associated with risk of CKD. However, the lowest intake of less than 0.8 g/kg/d—including comparison with the estimated glomerular filtration rate, calcium and vitamin D, and carbohydrates and fat. Such high-protein diets have become a popular weight-reduction strategy, but their effects on long-term kidney function remain unclear.

The NEJM review addresses many aspects of nutritional management for patients with CKD—not only protein but also sodium and fluids, potassium, phosphorus, calcium and vitamin D, and carbohydrates, fats, and dietary energy, and the microbiome, among other topics. It also includes tables and supplementary materials summarizing the low-protein diet and the evidence supporting its use in patients with CKD.

Kalantar-Zadeh acknowledged the significance of the publication of this major review of nutritional therapy for CKD, timed to correspond with Kidney Week—the largest and most important annual meeting of the world nephrology community. “For the ASN this is symbolically and strategically very important,” he said.


